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The Ministry of Fine Art.

OF the making of many books upon Art there is no end, and this infinitude of writing upon the subject is no doubt one testimony to its fascination. He who has not the power to produce a work of art himself likes to write about the art of others, or about art in the abstract; and at present, such is the will of fashion, there is a considerable public for such writing. The instances are more rare in which an artist becomes himself an author, and discourses to the public on the theory of art. Most workers in the field are too much taken up with producing art to have time or inclination to write about it. There is a little special interest, therefore, attaching to a book in which one who has been practically working at artistic production for many years takes up the pen to give us his thoughts on the scope and meaning of his favourite pursuit.

Mr. Gambier Parry, the title of whose book* stands at the head of this article, does not take his stand, of course, quite on the same footing as the members of the great world of artists. He has worked as an enthusiastic and gifted amateur in a special line of art,—that of ecclesiastical decorative painting of a Mediæval type; a form of art limited and restricted by various conventions and archaicisms. He has, however, laboured earnestly and successfully at art within this somewhat narrow field, as Highnam Church and Ely Cathedral can testify; and he may stand as a practical exemplar of the truth of the opening words of his book,—"Fine art comes of the union of love and labour, for without love it has no sufficient motive, and without labour it can have no success."

The title of the book, "The Ministry of Art to the Happiness of Life," is a well-chosen one, and in itself expresses briefly what is the real end and good of art,—to make life happier; but the title must be taken, we presume, as referring mainly to the contents of the first three essays or chapters, on "the Purpose and Practice of Fine Art," "The Ministry of Fine Art to Common Life," and "The Ministry of Fine Art to Spiritual Life." The first chapter is in reality a kind of answer to the question "Why am I an artist?" Or, to put it in a more comprehensive form, "Why is any one an artist?" Not that these well-worn questions are asked in so many words, but that is what the gist of the chapter amounts to.

As Mr. Parry admits, it is no easy matter to express oneself with clear or definite language in regard to this rather vague question; and, as he observes, the very word "art" is a bane of literary expression, "with a signification wide enough to embrace every work of hand or brain, and yet so utterly inadequate as to be useless without an adjective." In regard to the practice of art, Mr. Parry holds that the first step in a student's life is to divest his mind of all idea that genius can dispense with labour; the second, to learn all about his materials, and not take them haphazard or on trust. The third step is less easy of definite expression, and only amounts in Mr. Parry's creed to this,—that the artist realise the dignity of his calling and cultivate a manly vigour as his habitual tone of mind, &c. Into these largely-worded and vague maxims of artistic morality we need not enter; over and over again they have been enunciated in slightly different phraseology, the meaning of which may all be simply expressed in the phrase "Be a good man and you will be a good artist"; and over and over again in artistic history it has been shown that bad men may nevertheless be very fine artists. It is annoying and disappointing that it should be so, but not the less true.

In endeavouring to answer the question, "What is the purpose of fine art?" however, the author is less vague and more fortunate. "Is any purpose," he says, "assignable as its basis which distinguishes it from all other subjects. The arts which compose it are totally distinct in ideal and in execution, and every artist appears to have a special purpose in every work he produces. Is there, then, no general purpose which binds them all together?" Mr. Parry defines this general purpose as "the expression of the sense of beauty." This is a simple but comprehensive and complete definition. It covers everything that comes under the name of art. From the making of a door-handle to the modelling of a statue, from a chair to a cathedral, the *raison d'être* of art is, "it will be more beautiful this way"; and this aim sufficiently separates art from science and literature, and defines her kingdom. The remarks on the succeeding pages in regard to the process of the artist's mind which culminates in a work of high character,—the process not of merely reproducing the facts of what he has seen, but of forming an ideal conception of a scene or action in its most impressive aspect,—are very eloquent and finely put, and very suitably illustrated by reference to two masterpieces of art: Leonardo's "Last Supper" and Turner's "*Téméraire*." Was the old *Téméraire* really towed to her last berth under such a rich and solemn glow of evening light? We do not know,—probably Turner did not know. But the idea of the old ship, once foremost in fight, now hopelessly towed away to be laid aside, fired his imagination and his sympathies, and he represented the scene in a light that he felt was worthy of it; it was "more beautiful" so, and therefore more artistic.

Into Mr. Parry's musings on the ministry of art to "Common Life" and to "Spiritual Life," it is hardly necessary to go here, except to express our general sympathy with the reflections embodied in them,—reflections which have occurred to many who take art seriously, and have many times been expressed, often worse, not often better, than here. We recommend to the reader, however, in the chapter on the "Ministry of Art to Common Life," the description (pp. 28-29) of the untidy home, and the gradual effect on it of the coloured print brought home by the child as a prize from school, the influence from which extended by degrees from one article in the room to another, and finally to the aspect and expression of the inhabitants. The chapter on "Art and Archæology" also does not suggest much for critical consideration, being rather a general reflection on the interest of the study of archæological art, which we are all agreed upon. The author touches happily on the universal tendencies of mankind in ornament, as exemplified in ancient and modern ornament. "The potter of prehistoric days decorated his pottery with spots, lines, and chevrons at nature's own suggestion, adopting the fundamental principles of repetition, proportion, and contrast, by which the most consummate art has ever since been ruled."

When we come to the chapter on "Colour and Sculpture" we are more in the region of matters on which opinion and controversy are possible. Mr. Parry, we need hardly say, is an advocate for colour in sculpture, though he takes a reasonable and not an extreme view in this matter. He objects to the idea of the special "purity" of white:—

"All colours are contained in it; for it is not by their annihilation, but by their union, that they produce white. We associate purity with white, but colours are as pure; it would be hard to find impurity in the rainbow, but there is no white there. Sea foam or snow, a chalk cliff and lily, are white, but all their whites are different*; and every undulation of form, every half tint or light reflected upon them, and still more their shadows, make those whites again more different. Why do we associate perfect purity with white? Is it not because of its exquisite union of all colours? We do well to treasure the idea of its purity, but

* The Ministry of Fine Art to the Happiness of Life: Essays on various Arts. By T. Gambier Parry. London: John Murray. 1886.

* Is not this equivalent to saying that none of them are pure white? The question is between colour and pure white.

none the less is colour pure. The snow white mountain against the midday blue is as the white of an opal, and as the morning rises and the evening sets upon it, it turns to gold and ruby, and at night it is more silvery than the moon. These colours are but elements of its whiteness, and are as veils of beauty thrown over it in nature's varying moods."

All this is very true and very picturesquely put, and with the conclusions of the author as to the extent to which colour should be or may be used in sculpture we are not disposed to quarrel. Of course he does not for one moment wish for realistic colour. "The nude of a statue is not flesh, the drapery of it is not stuff of woven flax or wool, and colour that would be used in either case with the purpose of deception would be a falsity and offence." But Mr. Parry is certainly not happy in his quotation from Gibson, who wrote to a friend that "form is spiritualised by the tinting; *it makes us forget the material;* the Greeks were right" (!) Let any one look at the tinted statues in the Gibson collection, with their coloured doll eyes and the coloured borders to their robes, and say if this is a way of idealising or de-materialising sculpture! It is highly improbable that the Greeks did anything at all like this; if it could be proved that they did, the only conclusion we could come to would be that they were not quite such great artists as we have been accustomed to think. Mr. Parry is more in the way of artistic righteousness when, a page or two further on, he argues against pure white marble on the ground of its over-lustrous quality, reflecting too much light into the shadows and failing to show all the delicacy of the modelling clearly. "Terra-cotta has been a favourite and successful material from the soft richness of its tint." Marble, however, Mr. Parry goes on to say, is the queen of all materials for sculpture; materials of dark colour, like porphyry and bronze and black marble, "need highly-polished surfaces to make their modelling visible,"—so Mr. Parry states it; we rather question his conclusion as to the necessity of this high polish in such substances, but he is quite right, of course, in saying that this polishing of dark marbles and bronze, which habit at all events has sanctioned, leads to a disagreeable effect of high lights in violent contrast to the dark colour of the material. The sculptor, who modelled the surfaces and knows what they ought to show, of course complains of this; but the brilliant decorative effect of bronze and dark marble has always been liked by decorative artists and painters, who love these flashing lights in giving effect to a painting of an interior. We may say, then, that these dark substances with a high polish should be confined to what may be called, rather, decorative sculpture, than used in imaginative and expressive work of the highest class. But to return to our white marble; this, says Mr. Parry, is the finest sculptor's material, with the one defect of its too great lustre; let us therefore tone it with some rich and mellowing tint, which will impart to it, by an artifice, the subdued lustre which would in future be imparted by the lapse of time. Granted; and if this tint be of such a nature that it does not cover the surface like a pigment, but rather sinks into the marble, leaving its beautiful grain and crystalline surface unimpaired, we should opine that such a treatment was an almost unmixed gain to the artistic result. It should be applied, however, to the marble as a whole,—drapery and all; not to flesh tints to distinguish them from drapery, which is merely to reduce the thing to a toy, as Gibson, by his unhappy experiments, in fact, did for his "Hebe." The process of toning down marble by a stain, and of colouring various parts of a statue with different tints (even if highly conventionalised and kept away from nature), are two widely different proceedings, and an acceptance of the one does not in the least imply the acceptance of the other.

In regard to the question how far the Greeks really carried the principle of what may be termed parti-colouring of statuary, Mr. Parry is inclined to imagine some distinction between the practice in regard to sculpture treated separately and sculpture in combination with architecture. The evidence for the use of decided colour in architecture with the Greeks is much stronger than any evidence in regard to sculpture separately, and it is natural to think that friezes which were grouped with and were actually in a sense part of the architecture were treated in a manner to harmonise and form one whole with it. We are glad to find, however, that Mr. Parry does not accept the extreme polychromatic theory which would present the Greek temples to our imagination as entirely covered with strong colour. He adopts the view which we have always supported, that special parts were selected to be heightened and emphasised by colour, and that this colour would in many places probably be applied in the form of open decorative design, leaving the marble (toned perhaps) as a ground. There is nothing in this to shock our associations with Greek taste as the standard of artistic purity. Mr. Parry sums up his view thus:—

"It appears, therefore, that the treatment of architecture and sculpture differed on plain and reasonable grounds. The former had made part of a complex effect, and in consistency with the demand of artistic breadth, it had yielded to the stern demands of artistic composition. Colour had formed a very important part in it. Independent statuary, on the contrary, was clear of all obligation, and its colouring had relation to itself alone. With the exception of a few touches of colour on drapery and accessories" [but there, alas! is where the cloven hoof comes in!] "to save the whole from insipidity [!], the treatment appears to have been very tender, the main purpose having been to clear the supports and parts of inferior importance from the figure itself, and thus by contrast to emphasise the beauty of the nude."

In relation to the evidence of the use of colour, Mr. Parry refers in a pathetic tone of regret to the rapid fading of colours which were in some cases plainly visible when statues were first dug up, and faded rapidly on exposure to the air, so that only the evidence of the original discoverers can be taken as to their chromatic condition. The author quotes a letter from Mr. Newton in regard to the colours on the architectural and sculptural remains of Halicarnassus,—"I saw them fade away in the sunlight like a ghost." Mr. Parry also adverts to the hard experiences which coloured fragments have had to go through in cleansing,—"at first well cleaned on their discovery; then, on arrival at their destinations, well soaped for taking plaster casts; then chemically washed to get rid of the soap." We remember standing by the late eminent Keeper of the antique marbles at the British Museum, when a question was discussed as to the former colouring of a certain architectural fragment, and an attendant put in, "Well, sir, it was scoured with soap lees to get the dirt off"; a statement which seemed sufficient to account for disappearance of any possible trace of colour that might have existed. But what strikes us as odd is, that amid all these admissions and laments as to the fugitive nature of the colouring on the Greek sculpture and architecture, it never seems for a moment to occur to Mr. Parry that there is an element of weakness in a system which brings such a perishable method to bear upon the completion of arts which, like sculpture and architecture, are in their grand work monumental and comparatively imperishable in character, and owe to this quality part of their effect upon the imagination.

In regard to architectural wall painting, the author admits that "the nude beauty of uncoloured architecture is of the most pure and abstract kind," and we are glad to get this admission of a view of the matter which has been rather overlooked of late years. In regard to Gothic architecture, for instance, there is a far higher pleasure to be found from pure stone mouldings, with their lights and shadows, than from some of the ill-judged examples of violent colouring which have been flaunted before us by enthusiasts on behalf of Mediæval colour, much of which was certainly coarse and crude, though not so bad in this respect, probably, as some of its modern so-called imitations. We can only pause to note in regard to this chapter the decisive manner in which the author distinguishes between picture painting, properly so called, and architectural wall painting. "Let the former," he says, "be as free as the air it imitates, but architectural wall painting is bound by the respect the one art owes to the other. In the former the effect should be annihilation of surface, in the latter its emphasis." This sums up admirably the radical distinction between the aims of easel painting and of wall painting.

We must refer the reader to Mr. Gambier Parry's pages for his views as to the history and practice of mosaic, and "Art and Artists on Glass Painting," which chapters occupy a considerable portion of the work. In speaking of the limitations of stained glass art, we may observe, Mr. Parry seems to give the right conclusion on the wrong reason; he objects to a too high-wrought realistic picture on glass, on account of "the prodigality of human labour on a material so fragile that the least injury would mar it": that is not the reason for conventionalism in stained-glass design; it is because the material will not admit of a realistic treatment, and any attempt at this involves inevitable failure. The chapter on the adornment of sacred buildings goes a good deal into this subject of conventionalism, summing up with the conclusion that modern art "has rested too exclusively on the study of naturalistic combination," and that the type of art which we call "monumental" or "sculpturesque" or "heroic," or by various names meaning really the same thing, must be awakened again if painting is to become "a power of abstract and ideal expression, in harmony with that greatest creation of man's genius,—architecture."

NOVEL APPLICATIONS OF PORTLAND CEMENT CONCRETE.

BY B. H. THWAITE, C.E.

THE *primâ facie* advantages of Portland cement concrete may be enumerated as follows:—

Its strength increases with age.

Its immunity from the ravages of organic elements.

Its freedom from oxidation or corrosive influences.

It will be seen that as an external structural element *per se*, or where artistic effects are not required, it has decided advantages over iron or timber.

The former is rapidly affected by contact with moist surfaces; the latter is subject to organic decay and the ravaging effect of minute animal life. Subjected to the effect of high temperatures,—as in the case of fire,—the latter is quickly destroyed, adding a contributory element to combustion. The former expands or cracks, and is a very treacherous material unless preserved from immediate contact with the flame. The combination, then, of the iron as the element of tensional strength along with the preservative and compressional strength of concrete, would appear to be most rational and superior to the use of either material *per se*; for positions where the outbreak of fire is a possible occurrence, or where the action of oxidation may prove damaging to the stability of the iron, the composite principle of construction may be adopted as a perfect *ensemble*. For floors, if the iron is placed in the form of wire attached to the points of support, and so placed in the section of the beam or floor as to take all the tensional strains whilst utilising the compressional strength of the concrete, this is a correct development of the principle for actual practice.

The application of the principle of the use of wire netting along with Portland cement concrete has lately been largely developed by Mr. David Wilson, of Grays, Essex. Mr. Wilson has been experimenting for a very considerable time with many strikingly novel applications; and many engineers who visited the Liverpool Exhibition would be struck with the exhibit of Mr. Wilson, which comprised a telegraph-pole with arms, 33 ft. long (the material forming an admirable insulating agent), a section of a 9-ft. sewer, a chimney-pipe, and a railway sleeper. The *modus operandi* adopted by Mr. Wilson for the construction of his telegraph-poles is a most

interesting and ingenious one, and is as follows (see figs. 1, 2, 3, and 4) :—

A sheet of iron wire netting of the length of the pole, and of a width equal to its required circumference, is formed into a taper tube the length of the pole.

The principle of construction of the pole will be clearly seen by the segment shown in fig. 1,—2 is the wire netting, 3 the hollow core. Special moulds, in segments and

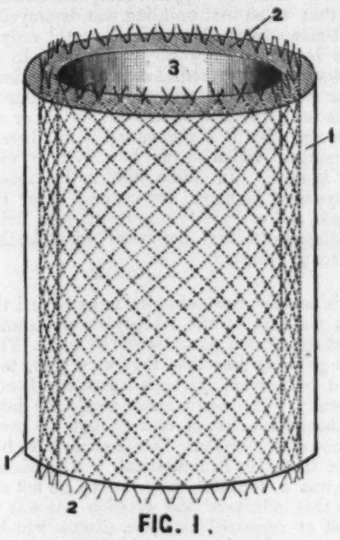


FIG. 1.

FIG. 2.

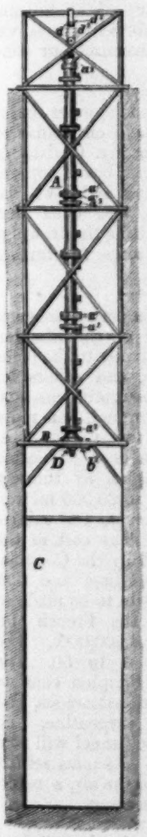


FIG. 3.

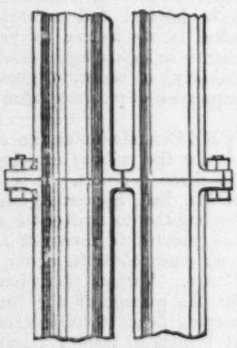
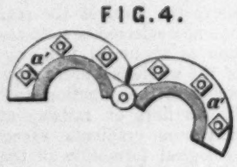


FIG. 4.



Wilson's Iron and Concrete Constructions.

arranged to open in half (see figs. 3 and 4), are bolted together to form the full length of the pole.

The moulds, A, Fig. 2, are placed vertically in a pit, *c*, on the side of a wall sufficiently deep to allow a mandril the length of the pole to be covered ; they are first placed beneath and in the centre of the mould. As soon as the mandril, D, which forms the internal hollow of the mould, is in the position named, the mould is opened in half, and the wire netting, 2, is placed therein. The mandril is now lifted up into position shown in fig. 2, and the two halves of the mould are brought together. The concrete is poured into the hopper, a^2, at the upper end, until the mould is filled.

During the time the concrete is setting the mandril is occasionally turned to prevent the concrete from binding on it while it is setting.

After a certain period of time has elapsed, sufficiently long to allow the concrete to thoroughly set, the mandril is lowered free from the mould by the pully blocks, d^2. The clamps, $a^3 a^3$, which connect the two halves of the mould together are now removed, the mould is opened, and the pole is then ready for removal, and can be shipped off or erected without further labour. The arms are made of concrete, and are attached to plugs of wood let into the concrete shell.

The latest poles made on this ingenious principle are 30 ft. long, and are 7 in. to 3½ in. in diameter, weighing about 15 lb. per foot in length. The 20 ft. pole is 6 in. to 3½ in. in diameter, weighing only 12 lb. per foot in length.

The application of the same principle of construction for the manufacture of sewer, drain, water, and gas pipes, has considerable advantages over the use of iron or earthenware drain pipes,—the former is rapidly reduced by corrosion and the latter is liable to become broken by the weight of the superincumbent earth.

A sewer-pipe constructed on this combined principle, but with two or more layers of wire netting evenly distributed in the thickness of the shell, makes an ideal structure for strength, durability, economy, and facility of construction.

To test the strength of a drain-pipe on this system of construction a pressure of water was established in a pipe of 12 in. bore (only six weeks old), and at 60 lb. pressure per square inch the pipe remained intact. A ball 7 lb. in weight was allowed to fall from an initial height of 1 ft., increasing finally to a height of 11 ft. The ball at this height caused a surface-fracture of an insignificant nature.

Applied to the construction of cylindrical tanks, the system has distinct advantages over those of timber or iron ; there is no oxidation, painting is not required, the water keeps cool in hot weather, the system costs less in first cost and practically nothing for maintenance, and, measured by capacity, is the same weight. A *sinâ qua non*, however, in this system of construction is clean and thoroughly reliable cement, and well-selected and clean aggregate.

NOTES.

IT is probable that no ordinary duty in time of peace is so disastrously fatal to those who discharge it as are the shunting operations on the railways of the United Kingdom. The devoted men who perform this function form the very forlorn hope of civilisation. No adequate reason exists for the dangerous manner in which the duty is discharged. It is a scandal to the railway manager, to the Board of Trade, to Parliament, and to the country. To this, late enough in the day, some of the companies are now awakening. The Midland Railway Company instituted a public trial of various systems on the 2nd inst., at Derby. The question whether it is better to have an automatic coupling, or one that can be worked by hand without getting between the vehicles, is one not easy to decide. But the practical difficulty lies, not in the invention of a good mechanical appliance, but in the great diversity of vehicles in use on our various lines. The adoption of such a system as that introduced on the Italian railways, where certain normal dimensions are compulsory, would go far to facilitate the introduction of a safety coupling. But it is late in the day to talk of such a matter in England. In the meantime it is stated that by the use of a pole armed with a hook, the shunters can couple and uncouple with rapidity and safety. Twenty wagons were uncoupled by two men in 70 seconds, and coupled in 76 seconds ; and the simple implement is said to have been used for twelve months without mishap. Pending the decision of the best and safest coupling, this coupling-hook ought to be immediately introduced at every station, and it is several chances to one that it will hold the field against any other method.

THE many visitors to Brighton, and especially those who prefer the scenery and the comparative quiet of the east cliff and Kemp Town to the garish bustle of West Brighton, will be sorry to hear that the days of the old chain pier are likely to be numbered, and that pleasant, though solitary, promenade,—"far from the madding crowd,"—may soon disappear. It is proposed to apply to Parliament for a Bill to incorporate the properties of the Aquarium and the Chain Pier, in which case the latter venerable object is to be pulled down, and its place supplied by a new pier, which, at its sea frontage, will be extended in the form of a T-head for 600 ft. A marine palace, with all the usual frivolities that characterise such places, will be erected on the pier on a scale which, it is expected, will quite overpower the attractions of the West Pier. Under the same undertaking is a proposal to run out another pier of 500 yards, opposite the end of West-street. This is apparently to be used as a ferry station for the conveyance of pleasure-seekers to and from the new structure, though its necessity does not seem quite clear. It is not by any means the first time that this end of Brighton has been professionally inspected by the speculative improver, for it was once proposed to annex a considerable portion of the cliff wall and the Madeira-road for a range of *al fresco* buildings, containing baths, hanging gardens, concert halls, and all kinds of attractions. Fortunately for the inhabitants of the Marine Parade this project was never carried into effect, and the Madeira-road still remains intact, with its combined advantages of sea air, shelter, and the electric railway.

FROM the extreme cold of last week, it would almost have seemed that the horrors of a London winter were again upon us, and that we might at any moment find the streets blocked with snow for an indefinite time, in proportion to the activity and power of coping with it on the part of the various vestries. It is a serious matter in any case, seeing that a 6-in. fall over one mile of road 60 ft. wide entails the clearing away of over 6,000 cubic yards of snow. We trust that in the event of a heavy fall no time will be lost in applying Mr. Lyons's snow-melter, by which, during last winter, 21 yards of consolidated snow, weighing 10½ tons, and equal to 198 yards of fresh snow, were melted in 10 hours, at a cost of 1s. 7d., or 1¾d. per ton. The apparatus appears to be simplicity itself, consisting of a series of wrought-iron tubes with a slightly arched upper surface, cut into lengths of about 6 ft., and made to fit into each other. At one end is a furnace. The apparatus is laid along a gutter, the furnace is lighted, and the snow is shovelled on to the heated surface, whence it runs off to the nearest gully in a stream of water, at once relieving the contractor of half his difficulty, while the drains are advantageously flushed by the waste water. The whole thing is easy and cheap to work, though these are not always recommendations to vestries, who are not prone to experiment with novelties.

IT is to be sincerely hoped that the action just taken against the Great Western Company, with a view to prevent the destruction of the Thames and Severn Canal, will not only be successful, but that it will inaugurate a general and energetic crusade in favour of restoring the inland waterway system which in former days was of such importance to the country. The case of the canal in question is particularly lamentable. According to the Act of George III.'s reign, under which the canal was made, the committee of management should be thirteen persons ; but these have dwindled down to eight, every one of whom is a nominee

of the railway company, and the canal is now virtually managed by a sub-committee of three railway officials. The result is easily imagined. The Great Western have assumed all the rights of proprietorship, and, not content with a tacit neglect of the canal interests, they have actually let the water out, so that the canal was for eleven miles a dry ditch, and for the rest of the way a stagnant pond. All the lock gates are useless from want of repair, the lock-keepers dismissed, and the feeders utterly neglected, and it is evident, according to the memorial, that there was a deliberate intention of destroying the canal, so that the railway should have no competitor in its goods traffic. This case (one out of many in England) is all the worse because the Great Western influence is paramount in the district through which the upper waters of the Thames and the canal flow, and for the last few years the whole trading community has been denouncing the grasping monopoly which has been gradually tightening its meshes around it. Unfortunately the neighbourhood is agricultural and bucolic, slow to realise facts and slow to act; but we trust that now that public attention is being roused, the railway powers will soon have to draw in their horns.

FROM a paper read the other day at Canterbury by the Vicar of Herne, it appears that the well-known and interesting church at Herne is in a rather precarious condition, owing to the state of the tower, which is said to be due to the curious fallacy of the original builders in hollowing one of the angle buttresses into a staircase, leaving it with the same external outline and appearance as the other angle buttresses, having the form of a buttress but without the power thereof. "The east and north sides," says the Vicar, "are rent and cracked from top to bottom, and are considerably out of the perpendicular. One of the stone steps of the turret staircase recently fell out of its place, and the newel of the stairs is much twisted and broken." It has been recommended that the peal should not be rung in the tower for the present, and that the staircase doorway should be built up with solid masonry, and other works of strengthening done. An even more pressing need was that of a new roof, the present one being no longer even weather-tight. About 700*l.* is required for the work of reparation, and a subscription-list has been opened.

AN interesting set of oak carvings has lately been lent to South Kensington Museum. They are figures, 2 ft. 6 in. high, of soldiers; being the newels of the grand staircase of Blickling Hall, county of Norfolk, the seat of the Marchioness of Lothian, which dates from 1620. One of them is generally accepted as a very early presentment of a private in the renowned 42nd Highlanders. We should think it is rather a private in the old "Royal Scots,"—who were formerly dressed *more Celtico*,—predecessors of the now 1st Royal Scots or Lothian Regiment; for the "G.R." upon his shot-pouch goes to show that the figure was carved before 1728. The "Independent Companies," originally six in number, were raised in 1729 as a constabulary force for service in the Highlands. They were locally styled *Am Freicadhan Dubh*, or Black Watch, from the sombre hues of their tartan, in distinction from the *Saighdearhan Deargh* or Red Soldiers (regulars). The Black Watch, with four new additional companies, were established October 25, 1739, as the 43rd Regiment, under command of Alexander (Lindsay), fourth Earl of Crawford and Balcarres. In 1749 their regimental number was altered to "42nd," on the reduction of General Oglethorpe's battalion. This statuette has no target, whilst most of the Black Watch carried targets at Fontenoy (1745), and many of them as late, at least, as 1747. The disposition and pattern of his weapons and appointments, — pistol, dirk (*bedag*), broad sword (*glaivgh-mohr*), socket-bayonet and fusil, belts, and gypsire or *dorlach* (precursor of the much more modern goat's hair or badger's skin sporran),—are fairly correct. The philabeg is puffed out in ample folds over the hips and back, and without any "kilting," as the term is now mistakenly used. But the artist omits the plaid, which should have been carved as thrown over the man's left shoulder from the back. At the time we speak of most northern Scotsmen had one garment only. They first kilted this,—"kilt" is Lowland Scotch for a shortened or tucked-up skirt,—around their loins, and then drew the rest of the cloth,—its pattern, and not the stuff, being the tartan,—for a plaid over their shoulders. We notice these particulars since we understand that this unique effigy is to be reproduced by Mr. Boehm as an authentic model of a Highlander.

FROM Olympia comes the very satisfactory news that all doubt as to the nature of the large building discovered at the south-west corner of the Altis is set at rest. Professor Treu has happily discovered an inscription on one of the stones of the building which states that it was erected by Leonidas, son of Leotos. The bare news only has come by telegram, so we are unable to give a facsimile of the inscription. The news is specially satisfactory for Dr. Bœtticher, who reports the telegram in the *Philologische Wochenschrift*, Dec. 4. He had always maintained that the large south-west building could be none other than the Leonidaion, and he marks it as such in his plan. The Leonidaion, it will be remembered, was seen by Pausanias (v. 15, 2) as he came back to the Altis after visiting the "workshop of Pheidias." "You see it straight before you," he says, "as you come back. The Leonidaion is outside the sacred enclosure, and it is the only one of the approaches to the Altis which is used for processions. It was built and dedicated by a man who was a native of the country, Leonidas by name, and in my time the Roman governors made it their quarters. It is separated by an *ἀγυιά* from the procession gate. The Eleans call ways that the Athenians would speak of as narrow passages (*στενωπούς*) by the term *ἀγυιά*, *i.e.*, broad road." All this is made clear by the excavations; a very narrow passage does lie between the Leonidaion and the procession-door, and it was this passage that provincial pride called by the grand name of *ἀγυιά*. The procession-door is itself very small,—large enough to admit six persons only abreast,—but then the sacred gate at Athens through which the processions went to Eleusis was little larger. We shall be eager to hear if the style of the letters of the inscription confirm the usual hypothesis that the Leonidaion was built just before the Macedonian re-arrangement of the Altis.

THIS Leonidaion inscription has an interest beyond that of fixing the site of the building itself. It determines without a doubt which was the procession-gate, and hence, to a certain extent, the course of the procession. It gives us also a fixed point in the wandering of Pausanias, who was no doubt led round by his guide to see the sights in an order long fixed by tradition. We further understand now how it is that in the portion of the Altis just north of the Bouleuterion there was such a number of monuments of exceptional interest. It would be just here that the procession, after passing from the Leonidaion to the south of the Zeus temple, would turn and probably halt before making north for the great altar of Zeus. At this all-important corner, among a crowd of other monuments, stood the Zeus who was erected by the Greeks who fought at Platæa, and the stele with the names of the States inscribed who took part in the battle; also the pillar, with the conditions of the thirty years' peace between the Athenians and the Lacedæmonians; further, the offerings of Micythos; and last, but not least, the famous Nike of Pæonios.

THE question as to the advantage of mixing saccharine matter with mortar is assuming great interest, and facts are daily being brought forward to show that it is not only feasible, but of extreme value, both to the builder and the engineer. All experiments go to prove that the admixture of a little sugar to lime has not only the singular property of making the resulting mortar commence setting almost immediately, but also of giving it an extraordinary amount of strength, as compared with ordinary mortars. Nor need the saccharine matter be sugar, for treacle (say a ½d. worth added to a hod of mortar), malt, or even beer, will do just as well. It is stated that an Italian builder was sent for to Worksop in Nottinghamshire to erect a mansion, and that before he commenced he called out for malt to mix with the mortar. This was supplied him, and the result was that when that building was destroyed, a great many years afterwards, it could only be done by the agency of gunpowder. In the entries of many cathedral records is mentioned "For beer for the masons," a not uncommon event with the British artisans in this or any other age; but it is also varied with "beer for the mortar," which shows how well its value was known. In India, the native masons always use "jaghery," the coarsest sugar that there is, and everybody conversant with Indian buildings knows that they are notorious for their powers of duration.

IT is no very great surprise to us to find that a majority of the ratepayers of Hornsey voted against the purchase of the wood. Their view probably was that they were going to be taxed to provide an open space for London generally. The open space would be better for themselves also, of course; but all people are not aware of that. Statements have been made that the Ecclesiastical Commissioners' title was a doubtful one; but we do not suppose that influenced the decision; it was the dread of increased rates,—a disease which is epidemic. We do not applaud the ratepayers of Hornsey; we think they showed a want of sense and of public spirit; but taking human nature (among ratepayers) for what it is, we cannot share the surprise of some of our contemporaries at the decision.

FROM the Liverpool papers it appears that a Committee was to be held on Friday of this week to formally consider Mr. Christian's report on the Cathedral designs, but it appears to be implied that no decisive action will be taken in the matter as yet, and even that there is an idea of again exhibiting the drawings publicly, in order to give scope for further expression of public opinion.

THE Commission on the competing schemes for the railway crossing of the Simplon has made its report. It is adverse to the plans of Mr. Fell, Signor Agudio, and others for hauling the trains over the mountain pass, and has reported in favour of a tunnel, ten miles long, and 2,700 ft. above the sea-level, at Bondo. Various plans have been advocated for the passage of the Simplon by tunnels, varying from 16,400 mètres to 20,000 mètres, at heights of from 771 mètres to 680 mètres above the level of the sea. The cost of the line now selected is estimated by the Commission at about 3¼ millions sterling, and that of the whole 58½ miles requisite to be made to complete the junction with the French and Italian lines of railway at 4,400,000*l.* The maximum gradients exceed 1 in 50. The geological formation of the Simplon consists of various schists, crystalline, calcareous, and micaceous; of hornblende, serpentine, and gneiss. The south end of the tunnel will pass through hard granitic gneiss. As mica schists will not stand on exposure to the air, a revetment of the tunnel will be necessary.

MUNKACSY'S picture of the "Last Moments of Mozart," which is on view at Messrs. Agnew's, has been described and commented upon in one of our Paris letters some time back, when the picture was exhibited at the artist's studio in Paris, in a somewhat sensational manner, and accompanied by music from unseen performers. The picture, which represents Mozart seated in a chair, propped by pillows, and feebly conducting the singing of part of his own Requiem by some of his friends, is quite untrue historically, as Mozart died in his bed, and the singing of a part of the Requiem, by Süssmayer and other friends, actually took

place around his bed, though not on the day of his death. Nor does it appear that Munkacsy has made any attempt to revivify the portraits and personalities of those who were around Mozart at his death. He gives us a group of characteristic figures in the dress of the period, that is all. The central figure of the composer is fine and pathetic, the face somewhat handsomer than authentic portraits warrant. There is a fine broad style in the work, which is admirably composed; but it is to be regretted that, for the sake of dramatic effect, the painter should have ignored the known facts, and given what, to all who are conversant with Mozart biographies, can only appear a theatrically made-up scene.

MESSRS. AGNEW have also on view in another room a most interesting collection of the studies of Edouard Frère. One or two of these, such as "The Crucifix in the Church at Econen" (49) and "The Suppliant" (50), a very touching figure of a peasant woman kneeling, bowed over a rush chair, show the painter in a more serious light than we are accustomed to regard him in England. Some of the studies were for now well-known pictures. Among designs with which we are not familiar, Frère's sympathy with the humour or the seriousness of children is admirably shown in "The Young Cook" (37) and "The Young Student" (44), the latter perched on the top of a step ladder absorbed in a book.

THE monumental statue of the "Resurrection," the plaster model of which was on view at Mr. Maclean's studio in Brutonstreet on Saturday last, is a fine and unusual work of its class. It is intended as a monument to a deceased lady, to be executed in marble and erected in a cemetery at Wiesbaden; it represents the portrait figure of the lady, life-size, and swathed in long drapery clinging closely to the figure, rising on tiptoe from a semi-globe, which forms a kind of base to the work, and as if just about to take flight; the upturned face has an expression as if of hope mingled with the remembrance of pain: it is a very fine and pathetic head. We should, however, have preferred the figure without the wings; they help the composition, perhaps, by giving a greater breadth, but, in this scientific and physiological age, wings affixed to human shoulders make too great a demand on artistic faith.

AT the Fine Art Society's rooms are a series of very fine sketches by Mr. John Brett, made during "three months on the Scottish coast"; sketches in oil, remarkable not only for their general power, but for the amount and the certainty of the detail which is put into these paintings, mostly executed, we are told, on the spot, with the exception of an occasional boat or other adjunct put in afterwards. They show mostly wild weather and cold grey seas, though there are a few brighter gleams. The minute attention to the structural character of landscape may be remarked on in these works; in the case of islets off a rocky coast, for instance, Mr. Brett does not show us mere bits of land in the middle of water; they are obviously the tops of peaks coming up from a considerable depth. The catalogue is preceded by a most amusing and caustic essay on landscape painting and critics and other subjects, containing much truth, some new lights, a certain amount of exaggeration, and a general contempt for everybody.

Royal Institution of Great Britain.—At the general monthly meeting, held on Monday evening last, Mr. Henry Pollock, Treasurer and Vice-President, in the chair, the following were among the lecture arrangements announced, viz.:—Six lectures (adapted to a juvenile auditory), by Professor Dewar, M.A., F.R.S., on the Chemistry of Light and Photography. On December 28 (Tuesday), December 30, 1886; January 1, 4, 6, 8, 1887. Five lectures on Molecular Forces, by Professor A. W. Rücker, M.A., F.R.S., on Thursdays, January 20, 27; February 3, 10, 17.

ANCIENT SCULPTURES IN CHICHESTER CATHEDRAL.

IT would probably be difficult to find, throughout the length and breadth of England, two pieces of early Mediæval bas-relief of so remarkable a character as the two sculptured scenes from the life of Our Lord which are preserved in the wall of the south aisle of the choir of Chichester Cathedral. Remarkable as they are from the vicissitudes of their history, and from the technical and artistic peculiarities which they possess, they are also remarkable from the fact that as they stand at present, the arrangement of their component parts,—for they are, to some extent, imperfect,—is, in some respects, incorrect and misleading. Little is known of the history of these stone bas-reliefs before the present century. Prebendary Stephens, who wrote "Memorials of the South Saxon See and Cathedral Church of Chichester," in 1876, thinks that we may venture to include among the relics, treasures, and works of art which were no doubt for the most part removed to Chichester when the seat of the bishopric was transplanted there from Selsey, about the year 1075, "the quaint, rude, yet forcible, pieces of sculpture, representing the Raising of Lazarus." Even from the time of their recovery in 1829 from their unknown place of hiding behind the choir stalls of the cathedral this suggestion was current. It is not improbable that the concealment of these ancient works of native art was effected by the pious hands of some of the dignitaries of the chapter, to escape the soldiers of Waller, who, during the siege of the city in 1643, made havoc of the cathedral monuments with their pikes and pole-axes. Insufficient as this conjecture is, and resting solely on probabilities, it appears to have directed all subsequent ideas as to the origin of the sculptures under notice. Their artistic value has, however, been recognised by the authorities of South Kensington Museum, who, we believe, have placed plaster casts of the designs near the entrance to the art galleries, but we are not aware that they had in any other way attracted the notice of writers and students of ancient fine art until the Congress of the British Archæological Association, held at Brighton in the summer of 1885, when the Bishop of Chichester, then President of the Association, pointed them out to the members of the Congress. But at that time the arrangement of the component pieces was accepted without remark. Subsequent examination of them, however, by the medium of photographs (which form Nos. 1 and 2 of our plate) led to the discovery that the broken fragments which had been recovered in 1829 under the circumstances already related, had been wrongly put together, with a somewhat incongruous result; and in a paper read* on the 19th May of this year, by Mr. W. de Gray Birch, F.S.A., suggestions chiefly for the re-arrangement of the second subject were for the first time put on record, and we have reason to hope that the Dean and Chapter are about to make the alterations which they and the cathedral architect, Mr. Gordon M. Hills, admit to be required, upon the lines laid down by Mr. Birch.

The sculptures consist of two scenes connected with the "Raising of Lazarus," a favourite subject with illuminators in the Middle Ages, but rarely found in stonework. The representations of the same miracle on earlier Christian sarcophagi lately published by Signor Tuminelli, of Rome, show that these Chichester sculptures are not derived from those very ancient conventional methods of treating the subject. The first *tableau*, of which our illustration No. 1 shows the present condition, has a cresting of carved foliage arranged in semicircular cusps of an early twelfth-century style, and the moulding or carved plinth which runs round the base of the ancient font in St. Nicholas Parish Church, Brighton,—remarkable for the scenes from the life of our Lord and St. Nicholas, which are carved on its sides,—has much detail in common with the crestings on this Chichester bas-relief. At best, we must attribute a post-Saxon date to the execution of the work, but it would be difficult to decide whether it was executed before or after the year 1100. On the left hand side is seen a castellated structure intended to represent the town or village of Bethany; the masonry, the battlements, the arcading of round-headed arches, the overhanging upper story, the conical towers, and the shingled roofing finished off with a spherical knob, are all so many details which may be studied in the partially, but by no means wholly, conventional representations of monasteries and churches engraved upon seals of the late eleventh and early twelfth century. Mr. Birch's remarks, upon which this notice is mainly founded, draw attention to the early seals of Canterbury Cathedral (Dugdale, *Monasticon Anglicanum*, new edit., vol. i., plate 1); Battle Abbey (*ib.*, vol. iii., plate 18); Burton-on-Trent (*ib.*, plate 17); St. Nicholas, Exeter (*ib.*, plate 19); Chertsea, and others, in corroboration of this date. The frescoes on the wall of St. Gabriel's Chapel, in the crypt of Canterbury Cathedral, contain pictures of architectural details which may be compared advantageously with those on this sculpture. The entrance-gate to the village is a round-headed arch, devoid of ornament, resting on the carved capitals of spirally and deeply fluted semicircular jambs, only that on the left being represented; that on the right is hidden by a figure. The doors are double; they are thrown back widely open, and the idea of massiveness and strength is imparted to them by horizontal ribs, or rails, and two hinges of simple foliated pattern on that on the left, the right-hand door being rudimentary, or, perhaps, imperfect. Martha and Mary are at the entrance, clad in flowing robes of Byzantine style, with tight sleeves and a wimple or linen head-dress, not far removed from the ordinary Saxon and later style of women's clothing. Students may compare the dress of St. Pega in the twelfth-century "Guthlac Roll" in the British Museum (Harley, Y. 6) for corresponding details, and several of the plates of the Palæographical Society's publications furnish similar examples. The one sister is standing, the other kneeling, with hands clasped and uplifted in supplication before the figure of Jesus, a man of colossal size, that occupies the centre, by the cunning skill of the ancient sculptor, who understood the indispensable necessity of balancing and arranging his composition as well as his successors did in the era of the Renaissance. In this figure, the centre of the bas-relief, the cruciformed and ornamental nimbus, the long hair, the stiffly-curled beard, the tablet or book with bordered edge in the left hand, and the robe of ample folds with plaited portions, reaching to the ankle, are carefully sculptured, and breathe the spirit of early native art when it had first emerged from the somewhat barbaric realism of the older Saxon style and caught new ideas and a certain amount of spirituality from a closer study of Byzantine and other foreign examples which riper contact with the Continent had introduced to notice. The right hand of the Lord is wanting; probably it was not unlike the hand of blessing which fortunately still remains to to the corresponding figure on the next design. Behind him are four disciples, in two rows of two each, standing on the peculiar hillocky or "hummocky" ground which is so characteristic of Saxon drawing, as exhibited in almost every illustration which belongs to the Saxon style; the nimbus of these is plain, the book held by one of them not so elaborately bordered, and the size of their figure is smaller in comparison with that of their Master. They form a careful balance to the buildings and the two women on the left. The head of one is wanting, it is true, but the other three heads clearly indicate the technical skill of the artist in rendering the various emotions of grief and expectation. The hair is treated differently in every instance. Similar varieties of representing hair when groups of persons are depicted are seen on the fresco of the birth of John the Baptist in the crypt at Canterbury Cathedral, already mentioned.

It will be seen that the cavities of the eyes are very much depressed, and it has been suggested that the eyeballs themselves were formed of glass or precious stones introduced into the sockets, but there is only slight evidence of this in one of the cavities, where some metal or trace of metal rust has been detected by Mr. G. M. Hills. If this is so (and we have far more ancient evidence as to the practice of thus treating the eye in some of the busts in the Roman Gallery in the British Museum, as well as the method of introducing lustrous *tesseræ* into the eyes of figures on mosaic pavements) it would account in some measure for the curious and unexplained fact that the eye, being

* The Ancient Sculptures in the South Aisle of the Choir of Chichester Cathedral, by W. de G. Birch, F.S.A., in the "Journal of the British Archæological Association," vol. xlii., September, 1886.

convex, is frequently represented in sculpture,—not only classical, but barbarous and prehistoric,—by a concavity, whereas other details of the body are rendered convex for convex, and concave for concave. This subject, just as the second, is not now composed of a single slab of stone; whether it was so or not at first we cannot say, but a cursory glance at the representations show that they clearly consist of six courses laid horizontally, and so fairly straight that the fact can hardly be attributed to chance fractures. The uppermost joint runs along the arcade over the doorway, under the beard of Our Lord, and through the nimbuses of the two lower disciples. The second can be traced running obliquely across the book which is held in Our Lord's hand; the third, across the shoulder of the standing sister; the fourth, along the shoulder and elbow of the kneeling woman, the Lord's knee, and the drapery of the disciples. The last joint may be noticed at the end of the carved jamb of the doorway, across the thigh of the kneeling woman and along the dress of the other figures. Some of the stones of the lower course are evidently out of order, and do not match the sculptured lines of the tier above. They will be put right without difficulty when the re-arrangement is effected, but there is a certain amount of cement here and there upon them at present which prevents their proper position being determined, and some paring down has been done. This method of building up a surface destined afterwards to be treated with sculpture is noticeable at the Saxon Chapel of St. Lawrence, Bradford-on-Avon, where the round-headed arches of the external arcading on the north wall of the chancel have been carved on rectangular slabs of stone, regardless of the position of the joints. It is to the peculiar formation of the panel that the important errors in the present arrangement of the second picture are no doubt due. Besides these horizontal courses there are numerous vertical joints and cracks, which show themselves. Some of these have been badly put together, either at the time of the discovery in 1829, or even at a remoter period, for there is no record, so far as can be gathered, of the state, whether broken-up or united, of these relics at the date mentioned, nor of the condition of the back at the time when they were let into the wall which they now adorn. The drapery of the left arm of the standing figure on the extreme left of the second subject belongs to the right arm and shoulder of Our Lord in the first design, and it has been replaced in that position in our illustration, No. 3, showing the proposed state of this first sculpture.

The second slab is a companion design to the first, and from the hand of the same artist. It represents the crisis of the great miracle. It also shows, as clearly as the other, if not more so, the six horizontal courses of stonework wherewith it is constructed. The uppermost joint runs along the neck of our Lord; the second through the book which he is holding; the third, where the cut break in the skirt of our Lord is seen; the fourth, just below the uppermost hands of the two gravediggers. The lowest line, where the break in the dresses of the figures, on the right hand is seen. This picture is the "Raising of Lazarus," and when complete, and correctly put together, in the manner which has been suggested to the Dean and Chapter,

FIG. I. (PRESENT STATE).

FIG. II. (PRESENT STATE).

FIG. III.—PROPOSED RE-ARRANGEMENT OF FIG. I.

FIG. IV.—PROPOSED RE-ARRANGEMENT OF FIG. II.

Sculpture at Chichester Cathedral.

it becomes perfectly intelligible. It may be compared with other illustrations of the same subject, and of similar antiquity, among the illuminated MSS. in the British Museum. No doubt many works dedicated to the elucidation of ancient Christian art would furnish other examples if they were required. There is, moreover, an interesting sculptured font at Lenton, near Nottingham, where the scene of the same miracle is differently treated, yet with some details in common with this. There, for example, are the Christ with the cruciformed nimbus, book, and right hand uplifted in benediction; the bandaged Lazarus in the sepulchre, the attendants opening the grave, the crowd of onlookers. But there is only one Lazarus on the font. Here, at Chichester, as the component pieces of the slab (if this term may be rightly used for many stones) are at present placed together, — we cannot say arranged (see No. 3),—two Lazaruses have been constructed by joining the head and upper part of the body of the resuscitated man to the left arm and hand of the disciple who is standing on the extreme left of the design, while on the lower part of the bandaged mummy-like body of Lazarus there have been superimposed the head and neck of one of the three assistants who are helping to extricate him from the tomb. This curious error has not been carried out without difficulty, and the result is that, not only are there two Lazaruses, but there are a hand and arms (properly belonging to the third attendant) without visible attachment to any other limbs or body. Besides all this, the confusion made with dresses of the disciple on the left, and the colossal figure of Christ on the right,—a figure with many points of general resemblance to that of the Christ in the first scene (No. 1),—is great. A theory has, strange to say, been put forward by some ingenious theorists to explain all this in a mystical manner, and to show that in one case we see the rising semianimate Lazarus dug out of the grave, and still partially enwrapped in grave-clothes; in the other a later action, and the resuscitated man, fully revived, praising his Saviour with upraised hands and upheld by the divine agency, uniquely indicated by a disconnected hand and arm. Behind the figure of our Lord are the heads of two disciples at the top of the panel, and a third disciple with a book in the left hand. The treatment of these resembles that of the corresponding figures on the first subject.

Now, if the disarranged pieces are taken out and re-arranged in the order in which they are shown on No. 4, the two Lazaruses rightly become one again, and we obtain a full-length figure of the rising man, with hands uplifted, naked to his waist, his hair falling down, and on his shoulder the fragmentary left hand of the disciple standing on the extreme left. The triangular piece of drapery which does not belong to this figure belongs to the left arm of our Lord in the first subject. The lower part of Lazarus is still enveloped in crossed bandages, very like those commonly used on Egyptian mummies. The head and neck of the third attendant,—for two have lifted the gravestone away with levers,—are by this arrangement reunited to the body of the man to whom they belong, and the mysterious hand and arm fall naturally to this figure also, who is supporting with his right hand the elbow of the risen Lazarus. It will also be noticed that the feet of Lazarus, enveloped in bandages, are resting on the draped edge of the grave, quite out of the excavated part, which is shown by a rounded rim behind him; and it is by this means that the artist has endeavoured successfully to portray the completion of renovated life. The reanimated figure, before his cerements can be stripped from him, stands up erect on the edge of his grave, and worships his Master spontaneously with uplifted hands. The details of the drapery of the skirts, in the present condition (No. 3), do not agree with the folds on contiguous slabs, but when the two slabs are removed from the lower part of the disciple on the left to the figure of our Lord on the right, they will be found to agree perfectly with the parts now in position; and the result is a satisfactory representation of the miracle. Some of the stones of the lowest row still require an examination previously to settling their final places, but the photograph does not enable this to be done so well as in the case of the figures, as they have been, it is feared, partly filled up with cement and otherwise altered to agree tolerably with the sculpture of the second row. The Dean and Chapter are, as we understand, aware of the necessity of re-arranging the design, and willing to undertake the work at a fitting opportunity, probably when the days grow longer. They will, when this has been done, have the satisfaction of feeling that the error which has been perpetrated since 1829 unnoticed, or at least unrecorded before 1884, has been removed, and they are sure to experience a great satisfaction at the appreciation of their proceedings by every one who will take the trouble to compare the present (Nos. 1, 2) with the suggested arrangement (Nos. 3, 4) of these beautiful sculptures. We all may thus not only rejoice with them in their having removed a blemish from their cathedral, but congratulate them on their possession of two ancient works of high art sculptured by English hands, such as may be sought for in vain in any other ecclesiastical building in England.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE CA' D'ORO, VENICE.

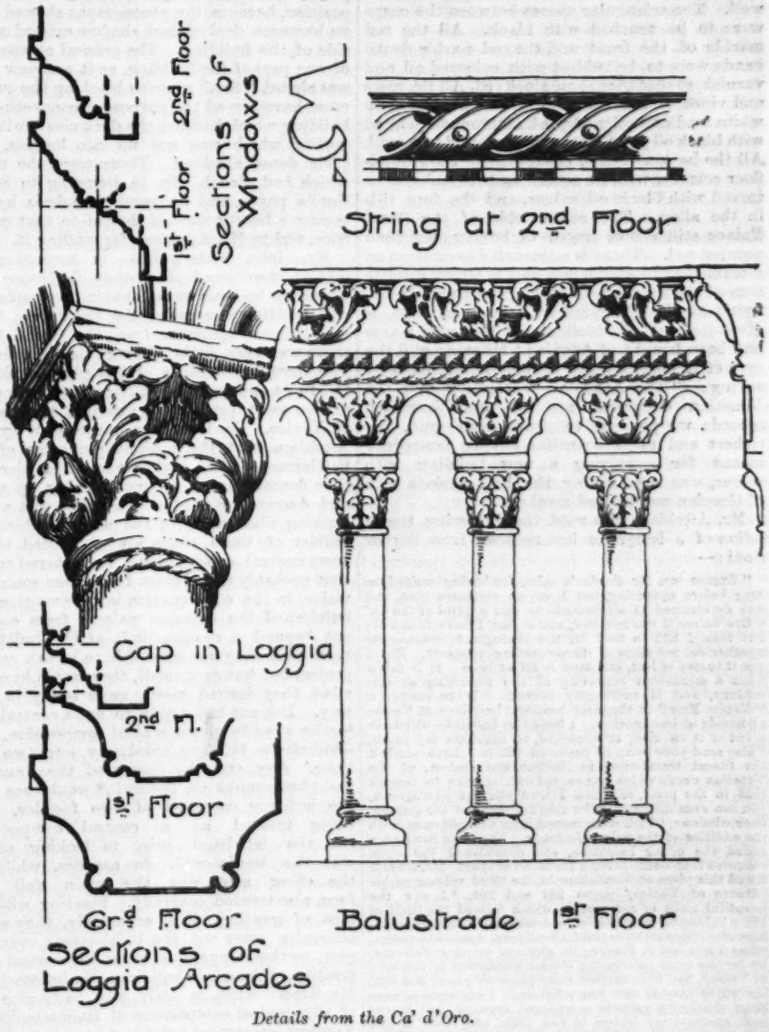
The third meeting of this Institute for the present session was held on Monday evening last, Mr. E. I'Anson, F.G.S. (President), in the chair.

Mr. George Aitchison, A.R.A., read a paper entitled "The Ca' d'Oro and its Polychromatic Decorations," by Signor Giacomo Boni, Hon. Corresponding Member (Venice). The paper, which was written in English by its author, was illustrated by some original drawings, including that by Mr. F. T. Baggallay, A.R.I.B.A., reproduced in last week's *Builder*, and a drawing prepared by Signor Boni expressly for the occasion, besides some photographs.

Mr. Aitchison explained, by way of preface, that the paper included several extracts from contracts between John Bon, one of Signor Boni's ancestors, who built the piazetta front of the Ducal Palace. Some very curious extracts were given from the original Venetian in these contracts between John Bon and Marino Contarini, who employed him to make the design for building the front of his palace; and in reading the paper he would have frequent occasion to quote the old Venetian terms.

The following is an abstract of the paper:—

Signor Boni's examination of the front of the Ca' d'Oro, made during its repair, convinced him that the battlements were original, and that a cornice originally existed along the whole front. This cornice consisted of a rope moulding supported on a trefoiled arcade springing from corbels; each arch curving outwards so as to form a series of niches on plan, and in the spandrels between each half-arch was a rosette. Some of the corbels and remains of arches still exist on the front, while on the return in the alley there is one perfect arch and one half-arch, but the rosettes have perished. The whole treatment shows that the front was coëval with the piazzetta front of the Ducal Palace, in spite of older work being built into the front of the Ca' d'Oro. Signor B. Cecchetti, the Keeper of the State Records, had found the memoranda and contracts made between John Bon (the architect of the Porta della Carta of the Ducal Palace) and Marino Contarini (the procurator and owner of the Ca' d'Oro), for building it; beginning from the year 1424. The sum of 160 golden ducats was to be paid to J. Bon for a year of his own work, of his son, and of his two assistants, Zane and Rosso. The work was undertaken by the owner, who paid the masons. Extracts from the specifica-



Details from the Ca' d'Oro.

tion of the 20th of April, 1430, relating to the cornice and battlements, are given in the original Venetian dialect, and some of the technical words are explained. The contract with J. Bon was for 210 golden ducats. The Venetian ducat, between 1425 and 1443, is stated to have equalled 12·012 francs. John Bon is called in these documents, as well as in the contract for the Porta della Carta, "stone-cutter." The specification minutely describes the manner of construction, the quality and size of the material, and the quantity of work to be done, and was accompanied by drawings

(now lost). When the stonework was done a new contract was entered into for the painting in oil and gilding of certain parts of the work, dated September 15, 1431. In it J. Bon is called "Master John of France, painter of St. Apollinaris." The specification states the colour to be used, the number of coats, the parts to be gilt, and that the ultramarine was to be fine and of the value of 18 ducats a pound. J. Bon was to have 60 golden ducats for this work; by a receipt of June 30, 1432, Contarini appears to have paid for the gold leaf. The parts to be gilt were as follow:—The balls of the battlements, the necking under the fleurs-de-lys, the rosettes in the spandrels, the foliage of the two large capitals, the two lions and the fields of the shields between their paws, and the edges of the mouldings of the tablets over the caps on which they stand, the ducats on the rope moulding; twenty rope mouldings round the circular panels of porphyry, &c., and the balls in the centres of these; the shield on the second floor, the dentil band round the panel, and the foliage within it. The ground of the large caps was to be ultramarine, and so were the bands on the shield the lions hold; the underside of the tablets on which the lions stand were to be of ultramarine with gold stars, the bands on the shield of the second floor were to have two coats of ultramarine. The cornice, the arcade under it with the cusps, were to be painted in white lead and oil, the battlements to be marbled and to have a black line inside the edges if it look well. The triangular spaces between the cusps were to be touched with black. All the red marble of the front and the red marble dentil bands were to be rubbed with coloured oil and varnish, so that they should look red. All the roses and vines of the front were to be painted in white lead and oil, and the backgrounds painted with black oil paint, so that they should look well. All the background of the foliage of the ground-floor cornice, with its return on the flanks, to be tarred with black oil colour, and the four sills in the alley. The red marble of the Ducal Palace still shows traces of having once been painted red. There is a learned dissertation on ultramarine in the paper, and a Greek inscription of the expense of building the Erechtheum, found at the Propylea at Athens in 1836, is given; a part of which states two gold leaves had been bought of Adonis at Mileto to gild the eyes of the column, and Signor Boni finishes by saying:—"The Athenian inscription and the Venetian document are the best inscribed records we possess to prove that gold, the richest and most beautiful among temporary means for supplying a new building with colour, was used during the best periods both of Grecian and of Mediæval art."

Mr. Aitchison also read the following translation of a letter he had received from Signor Boni:—

"Excuse me, for charity's sake, for having waited so long before answering, but I am an obstinate man, and was determined at all hazards to find a print of the Ca' d'Oro before it was renewed, and at last I have found it; but then I had to wait for the photograph, because the weather did not allow of its succeeding properly. But I got it to-day at last, and send it off at once. It is taken from a mezzo-tint engraving of the beginning of this century, and is sufficiently correct. It represents a "Vanity Fair" of the most beautiful buildings at Venice alongside of one another. I hope the Institute will have a cut of it on zinc, or somehow, to illustrate my paper. I also send your scrap of paper on which I have marked the literal translation, in English and Italian, of the Venetian words which you copied out. I wish to remark that in the print, of which I send you the photograph, you can even distinguish the original shape of the ground-floor windows, which were turned into two-light ones, with the addition of the ugly balustrade. The same hand even added the upper balconies, and demolished the open staircase that went through the internal court. Mr. Ruskin noted this piece of Vandalism in the third volume of his 'Stones of Venice,' pages 293 and 294, 'I saw the beautiful slabs of red marble which formed the basis of these balconies, and were carved into noble spiral mouldings of strange sections, half a foot deep, dashed to pieces, when I was last in Venice; its glorious interior staircase, by far the most interesting Gothic monument of the kind in Venice, had been carried away piece by piece, and sold for waste marble two years before.' I am sorry to have been unable to prepare a coloured drawing, but if you look amongst my letters of two years ago, there is one which exactly shows the distribution of the gold, the blue, and the red of a window dressing of the Ca' d'Oro."

The following is the extract referred to from a letter of the 16th Oct., 1884, in English:—

"As I am studying just now the façade of the Ca' d'Oro, I had an opportunity of making new and interesting investigations on the use of gold and colours. The traceries of the second floor are full of traces of gilding. The smaller window of the first floor is still more important, for it shows the employment of azure and red. The dentils, being too exposed, do not show any trace left either of gold or of anything else, but the ovoio was all gilt. The listello, which comes after it, was painted azure, which is now nearly all gone, but where it was laid thick there remained a dark *patina*. Scratching it, I found it was of the colour of cobalt. Then comes the *guscia*, where I could not find any trace at all. Then the indentation of the round *toro*, which in five centuries has turned brown, is still visible, the *toro* itself being entirely gilt. As to the gold itself, it is a beautiful yellow tint, like that of pure gold in the Venetian zecchini, and I do not know whether its granulated appearance is due to the influence of corrosion, but it seems that the gilding was not done with gold-leaf laid on a mordant, but with a gold paint (gold dust and some colla)."

Mr. J. D. Crace, in opening the discussion, said that in listening to the latter part of the paper it seemed to him fortunate Mr. Ruskin was not present that evening to hear how the pinnacles of the Ca' d'Oro were painted in whitelead and figured in imitation of marble. The points which were stipulated by the contract to be gilt appeared to have been selected with extremely good judgment, and one could not help feeling that the result of the gold must in itself have been exceedingly successful, because on looking at the photographs it could be seen how the band of gold gradually led up to the effect of introducing a sort of sunshiny appearance to the constructive points of the building. The use of the black ground also struck him as exceedingly worthy of notice. As far as he had been able to follow the description, black appeared to have been introduced as a sort of ground to the dark band which formed a kind of framing of the panelling-out of the plain surface of the frontage. No doubt where there were such very deep shadows under loggias, this black must have occupied a very useful position in maintaining the balance of the composition, because the photographs showed what an immense deal of dark shadow existed on one side of the building. The general composition of one part of the building, as it was now seen, was almost "flat," whereas blacking the ground must have served the purpose of connecting the building which had not the dark shade with the portion which was cut up into loggias, with their dense shadows. These were the points which had struck him in listening to Signor Boni's paper, and he would conclude by proposing a hearty vote of thanks to that gentleman, and to Mr. Aitchison for reading it.

Mr. John Slater, B.A., in seconding the motion, mentioned that when in Venice four years ago he was quite unable to decide why this building was called the Ca' d'Oro; for to the ordinary spectator from the Grand Canal there was very little gilding visible about it. The mere architecture of the place could not fail to be striking, the building itself being one of the most remarkable amongst the palaces of Venice. It had been mentioned by Mr. Aitchison that the upright pinnacles of the battlements being higher where the pier was, then descending in a curve, coming up again, and descending on the other side, was a very striking illustration of the way in which the builder of those times always wanted to get some central composition. It occurred to him that probably there must have been some provision in the old Venetian law preventing the builders of the common palaces from coming out beyond a certain limit of the buildings, because if they had been able to have a central projection, however small, they would have got what they desired much more easily in that way. But not being able to get a central projection so as to give a central composition, they divided the building absolutely into two portions. Any one who inspected the drawings and photographs on the wall,* would see that the building consisted of two façades, each being treated as a central composition. On the left-hand side, in looking at it, was the loggia with its arcades, while on the other side was the plain wall surface, also treated centrally. Starting with the idea of treating these separately, they would naturally carry out the battlements over the pier, so that they should assist the central composition of the whole building. He believed that Mr. Street, when in Italy, took particular note of this central composition of Italian buildings. Another interesting point had been brought out in the paper, viz., the fact that on both sides of this palace there was originally a *calle*, or small street, because if they looked at the right-hand side of the building they would see how much more distinctly the rope moulding,—which did not project from the building, but accentuated the angle in a striking and delightful manner,—was seen on the side where the opening was. On the left-hand side it was joined to another building, but as they had now learned that the Ca' d'Oro had been a detached building, with a *calle* on either side, the *raison d'être* for the rope-moulding coming down the two corners was evident. In hearing this paper he could not help being struck with the immense amount of research which Continental scientists gave to any subject they desired to treat, and in this instance it was evident Signor Boni had ransacked archives and classical literature to illustrate the points he wished to remark upon.

Mr. Thomas Blashill said he thought that he Ca' d'Oro was like a good many other buildings in Venice, in being of incomplete design. Here they saw the ordinary loggia of every typical Venetian house, in the centre, with a wing on the right side, evidently suggesting the idea of a complete composition with another wing on the left, as might be noticed in so many of the Venetian palaces. He wished, therefore, to ask whether there was any material for forming an opinion as to whether the Ca d'Oro was originally complete with its left as well as its right wing; whether the designer simply built it with the one wing in the hope that he or some one else might ultimately add the missing wing, or whether he did what might be possible, finding it convenient to have the ordinary loggia and only one ordinary wing, both of these having their uses, he was satisfied to leave it in that way for ever? In looking at the building from the Grand Canal he (Mr. Blashill) had considered what evidence there was on the façade, and certainly, at first sight, the rope moulding on the left-hand side, which was not repeated on the other side of the loggia, but which corresponded with that on the extreme corner of the wing, seemed to indicate that it was a finished composition. The architect had put his rope moulding with a capital on both sides, and, if the building was once larger and had been reduced, the rope moulding with the capital must have been removed, and that ought to be discovered by any practical mason. He had been trying to pick out a little evidence from the photograph, and he understood Mr. Aitchison to say that in the contract mention was made of thirty-two of the larger pinnacles. There were twenty-six shown by the photograph. Did the remaining six surmount the wing now missing? He could not quite see the artistic motive for giving the curved line on the top and throwing the highest battlements out of the centre, and not making the highest battlements in the centre of the loggia. It rather struck him that there was an intention of making three hollows in the tops of the battlements, the central hollow being over the loggia in the centre.

Mr. John Hebb said he thought the Institute might be congratulated on the activity of such honorary members as M. Sédille and Signor Boni. Perhaps Mr. Aitchison had not sufficiently emphasised the fact that Signor Boni had written his paper in English, into which language he had correctly translated the words of the old Venetian dialect. Those who had tried to translate technical documents would appreciate the difficulty of the task of finding the exact equivalents for some of the words. He hoped the Institute would encourage Signor Boni by printing his interesting paper with as many illustrations as possible. Several points seemed to be established by Signor Boni's researches. One was that the battlements, which had been supposed not to have formed part of the original design, were contemporary with the rest of the building; another was that a cornice existed under the battlements; and a third was that the date of the building was satisfactorily settled. He hoped that, in conveying their thanks to Signor Boni, the approval of his paper would not be interpreted as an excuse for restoring this cornice. If a new cornice were made, it would be certain to be constructed as all modern Italian work was, in a mechanical way, without any of the feeling of the original. The Venetians had a perfect mania for restorations. They had restored large portions of the front of St. Mark's in a way which all who had seen that building lately must consider unsatisfactory; and in all probability if there was the slightest hint given to the present proprietor of the Ca' d'Oro, he would be only too glad to make a restoration of the cornice.

The vote of thanks was then put, and was very cordially received.

Mr. Aitchison replied on behalf of Signor Boni and himself. Mr. Blashill had asked whether it was intended to have a centre and two wings, and he (the speaker) could not give any decided information on the point. From

* See also a view in last week's *Builder*.

his knowledge of Venetian buildings, however, he should think it was not intended, particularly as there was a *calle* on either side. It was, of course, impossible to look into the minds of the original owners of the property, but it was a very common thing in all the early Renaissance works to find places treated in that particular way, with one side, and that the larger portion, very ornate and pierced for the sake of shadow, and with another piece almost flat and but slightly pierced. So far as the question of the masonry went, he had no doubt that Signor Boni would be glad, if it were possible, to ascertain whether the mason, or the architects and masons, had ever any idea of adding another flank to the building. Mr. Hebb had spoken in complimentary terms of their common friend, Signor Boni, and of the enormous trouble he had taken in going into the matter. Signor Boni was a most brilliant and accomplished man, who was not only a good English scholar, but was also acquainted with French and German, and could read the Greek and Latin authors with the utmost facility. He was also extremely learned in construction and mathematics, and was a charming artist, sketching with an excellence which was most uncommon amongst architects. Considering the great pains he took, Signor Boni was one of the most valuable additions the Institute could have to its Honorary and Corresponding Members. As far as the question of polychromy went, he was in hopes that Signor Boni would have had time to send some coloured sketches, but this he had been unable to do. They knew from the remains that had been found in various parts of the world, that coloured decoration was common if not universal during the whole of the Middle Ages. When he was in Venice some thirty years ago he saw some figure-painting outside a palace said to have been done by Titian. At Brescia, again, there were whole streets with pictures painted on plaster, and very charming they looked. Viollet-le-Duc in his article on colour gave several examples of this. There was no doubt that when everybody who could afford it dressed in magnificently coloured and embroidered robes, often enriched with jewels, precious gems and intaglios, a plain building mainly of stone looked to them as wanting in vigour, colour, and richness, and they endeavoured to make it answer its purpose and be in harmony with all its surroundings by gilding and colouring it. It was known almost to a certainty that a great portion of the exterior of the Greek temples, which had been looked upon as being so perfect in white, were treated with colour. In fact, it had been ascertained that some of the extremely beautiful white marble had been covered with a coating of marble plaster to absorb the colour, and so permit it to remain for a longer time, than it could on the hard substance of the marble itself. He might reiterate what had been said in M. Sédille's paper, that if it was desired to re-introduce polychromy into such climates as that of London, and of England generally, it must be done by using those substances which were imperishable, such as granite, porphyry, a few of the serpentines, glazed terra cotta, and glass mosaic. These were the only means by which permanent colour could be introduced, and, for his own part, he considered it would be a great enhancement to the beauty of our buildings. In a city like London, with its smoke and dust, they might reasonably hope to see many of the houses of no great pretensions mainly covered with enamelled porcelain, enriched with ornaments and figures.

The President then announced that at the next meeting to be held on the 20th inst. a paper by Mr. William Brindley would be read, entitled "Marble: its Uses as suggested by the Past."

New Hygienic Museum in Berlin.—A large hygienic museum has just been opened in Berlin. The rooms on the first floor, numbering sixteen, contain exhibits relating to saving from fire, building, heating, ventilation, lighting, water supply, and road and street making. On the second floor are eighteen rooms, in which are shown objects used in civil and military nursing, clothing, baths, education, asylums, prisons, &c. It is expected that the Empress of Germany, who is much interested in this institution, will shortly open the museum officially.

THE CHURCH OF ST. MARY MAGDALEN AND ST. GREGORY BY ST. PAUL'S, CITY OF LONDON.

"In Knightrider-street, St. Mary Magdalen Church (Rev. E. Hoskins, Rector), roof nearly destroyed, belfry and rest of church and contents severely damaged by fire, heat, &c." So runs a passage in Capt. Shaw's lengthy official report of the disastrous conflagration of Thursday week.

Situated in Castle Baynard Ward, this is the self-same church which was formerly known, for the sake of distinction, as of Old Fish-street. To that thoroughfare its denizen fishmongers gave a name, and there they had two halls. It is at this day identical with so much of Knightrider-street as lies between the southern extremities of Bread-street and Old Change, Cheapside. Old Fish-street-hill was anciently known as Labour-in-Vain-hill, where the once Church of St. Mary Mount Haw (its eastern walls serving for the old burial-ground wall on the hill) occupied the site of the chapel belonging to a noble mansion on its summit, which, in 1517, had the Bishop of Hereford for tenant. But Queen Victoria-street has altogether changed the aspect and plan of this locality, and the later Lambeth-hill, by St. Mary Somerset's tower, Upper Thames-street, is all that now remains of Old Fish-street-hill. The foundation of St. Mary Magdalen would appear to be one of fairly ancient standing. It is cited in a survey made by the Dean and Chapter of St. Paul's, in the time of Ralph de Diceto, who was Dean during the period 1181 to about 1204, being then a perpetual vicarage. Some three hundred years afterwards it had become a rectory, with John Carpenter for Incumbent. Stow tells us that in the year 1640 the parishioners laid out 140*l.* for its structural repair. Singularly enough, a vestry meeting had been arranged to discuss some greatly-needed repairs upon the afternoon of the 2nd inst.,—the very day of the fire mentioned at the outset. The original church contained one of the customary memorials of Queen Elizabeth, with the as customary epitaph,—"Here lies her type, who was of late, The prop of Belgia, stay of France; Spain's foile, Faith's shield, and Queen of state, Of arms, of learning, fate, and chance," &c. The Fire of 1666 entirely consumed the Church of St. Gregory by St. Paul, whose position is now marked by the cathedral's southern campanile, and that of St. Mary Magdalen, together with its registers and archives. The former parish was thereupon joined with the latter; and in 1685 Sir Christopher Wren rebuilt the church in Old Fish-street, at a cost of 4,291*l.* 12s. 9½d. Its plan, being 48 ft. by 60 ft., is not quite rectangular. The walls to the top of the balustrade are 30 ft. high. The eastern end and southern side alone are unblocked by other buildings. Their elevation is of no uncommon design, consisting of ranges of round-headed windows, above the southern door level, having trusses at their sides which support a bold and continuing cornice. The stone steeple rises to 86 ft. over all. Whilst by no means elaborated, it has a singularly pleasing effect. An octagonal dome, 9 ft. in diameter, and rising 10 ft., interior measurements, rises from the tower's belfry stage. A plain pendentive brings this to the square. The exterior of the dome recedes by regular steps, to the number of five, and is capped by a plain lantern, also of stone, narrowly pierced; at top is a little concave spirelet surmounted by a vase.* Within the church were the large monument of Thomas Lockington, who died January 17, 1716, and a leaden tablet having a man's figure at the side thereof, and an inscription in black letter,—of date 1586. The twelve lines invoke blessings upon Elizabeth our Queen most just, and retribution upon "all papistes desiers." They conclude as follows:—

> "How small soever thy gifte shal be,
> Thank God for him who gave it thee.
> xii penie loaves to xii poor foulkes
> Give every Sabbath day for aye."

On the plate appears the monogram and merchant's mark of the benefactor, one Thomas Berrie. It appears that he devised certain property in Southwark, known as "The Red Cross," to the parish, charging that rent with an annual payment to the Bootle and Walton parishes, which have since been embraced within the area of Liverpool.* The parish itself has but a small extent, and 150 years since contained 103 houses. The population of the united parishes would seem to be diminishing, if we compare the last census with that of the next previous period. At the last census it was scheduled as 900. The living is worth less than 400*l.* a year, and has for ages past been in the patronage of the Dean and Chapter of St. Paul's. One of their most popularly known nominees was the late Rev. Richard A. Barham, appointed in 1824, a Pauline, and author of the "Ingoldsby Legends." The church property was insured. We hear that a question has already arisen as to the expediency of reconstructing the fabric. We do not mean to decide here what conclusions or action should be legitimately based on the data furnished by a recent "religious" census, privately taken, of attendance on Sunday in certain metropolitan places of worship; nor can we say how far the figures are correct that, in the case of St. Mary Magdalen, give a congregation in the morning of fifty-two, and one of sixty in the evening. At the same time, this particular quarter, certainly, cannot complain of a deficiency of church accommodation; for, on the opposite side of the street, and but a few yards removed from St. Mary Magdalen, stands the Church of St. Nicholas Cole Abbey and St. Nicholas Olave (united), which is also devoted to the uses of the parishioners of St. Mary Somerset, St. Mary Mount Haw, St. Bene't, Paul's Wharf, and St. Peter, Paul's Wharf. Within the compass of a small radius are several others; as, for instance, those of St. Augustine with St. Faith under St. Paul's; the already threatened St. Mildred, Bread-street, with St. Margaret Moses; All Hallows, Bread-street; St. Bene't, Paul's Wharf (lately committed to a Welsh congregation); St. Andrew-by-the-Wardrobe; St. Michael Paternoster-Royal, with St. Martin Vintry; St. James Garlickhithe, with Holy Trinity-the-Less and St. Michael Queenhithe; St. Mary-le-Bow, Cheapside; and St. Paul's Cathedral.

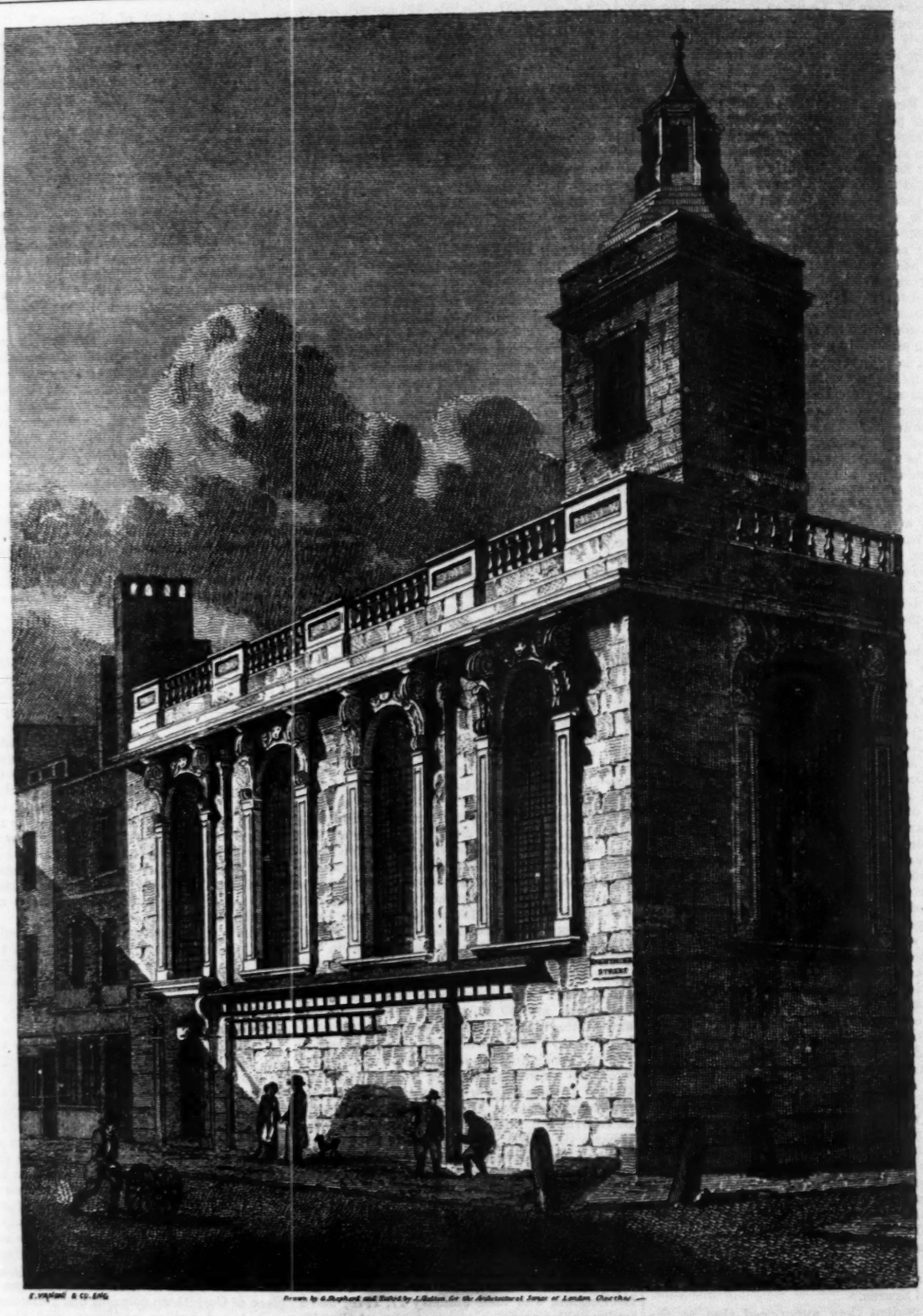
The ruin of the church is fortunately not altogether a total one. The walls stand uninjured, while there is no trace of fire on those of the south and east. Much of the glass even remains unbroken. The tower and belfry are, however, greatly scorched. The fire made its entrance into the church from the west, and through the northern window of the belfry, consuming the bell-framing, and causing its single bell to fall down, crashing through the trap doors of the various floors, and it now lies cracked at the level of the church.

The building had a strong oak-framed queen-post roof covered with lead, hipped at the east and west, the ceiling being flat internally, with a large bold cove returned around the circular windows of the south side, and with similar vaultings to correspond on the north, and at each end, there being corbels of cherubim, all of which remain, although the coving is more or less wrecked north and south. The fire rapidly spread around the roof, making its way through the coving and setting the timbers in so great blaze that the central principals fell bodily into the church, setting the pews alight and breaking a portion of the northern gallery.

The firemen, however, soon got the mastery of the flames, before the roof either at the east or west was consumed, and the truss of the former portion, deeply charred on face, still stands firmly in position, a curious study of the endurance of timber against fire, while much of the modern ironwork of the neighbouring warehouses is lying twisted and bent among the masses of ruin. The east end has an altar-piece of Corinthian columns and pilasters, with arched and broken pediment, and the usual arrangement of the Lord's Prayer, Decalogue, &c., "all finely done in gold letters and flourishes on black," with fruit, flowers, leaves, branches of palm, &c. The fire has not touched any of this, and the bright effect of the old work is in curious contrast to the mass of black and charred wood fallen from the roof all around. The pulpit, of oak, has been a very good example of ornamental work. The sounding-board remains, but the pulpit is sadly broken by the falling timbers. The stone font, on the north side, a pretty carved bowl on a slended baluster stem, has been struck by a falling timber, and lies broken off from its pedestal, although capable of repair. The pews are mostly reduced to ashes; but a great part of the north gallery, and the whole of the western lobby, the western

* We take these dimensions from Mr. Andrew T. Taylor's "Towers and Steeples designed by Sir Christopher Wren." London. 1881.

* *Vide* "The Churches of London," by George Godwin F.R.S. London. 1839.



THE CHURCH OF ST. MARY MAGDALEN, BURNED LAST WEEK.

gallery, and the organ in it, are untouched, except by water. The monuments are uninjured, and the small brass plate, portion of the monument to the memory of Thos. Barrie, merchant of the Staple, who left a dole of twelve loaves of bread for distribution every Sunday, is also perfect. This is a relic of the old church destroyed in the Great Fire of 1666.

The organ, erected in 1784, may be described as "severely damaged by water," the pipes and fittings being full. An oil painting which existed over the reredos, representing the Transfiguration, erected in place of some rays of glory, which formed the original design, was hardly injured by the fire, and has since been taken away for better preservation.

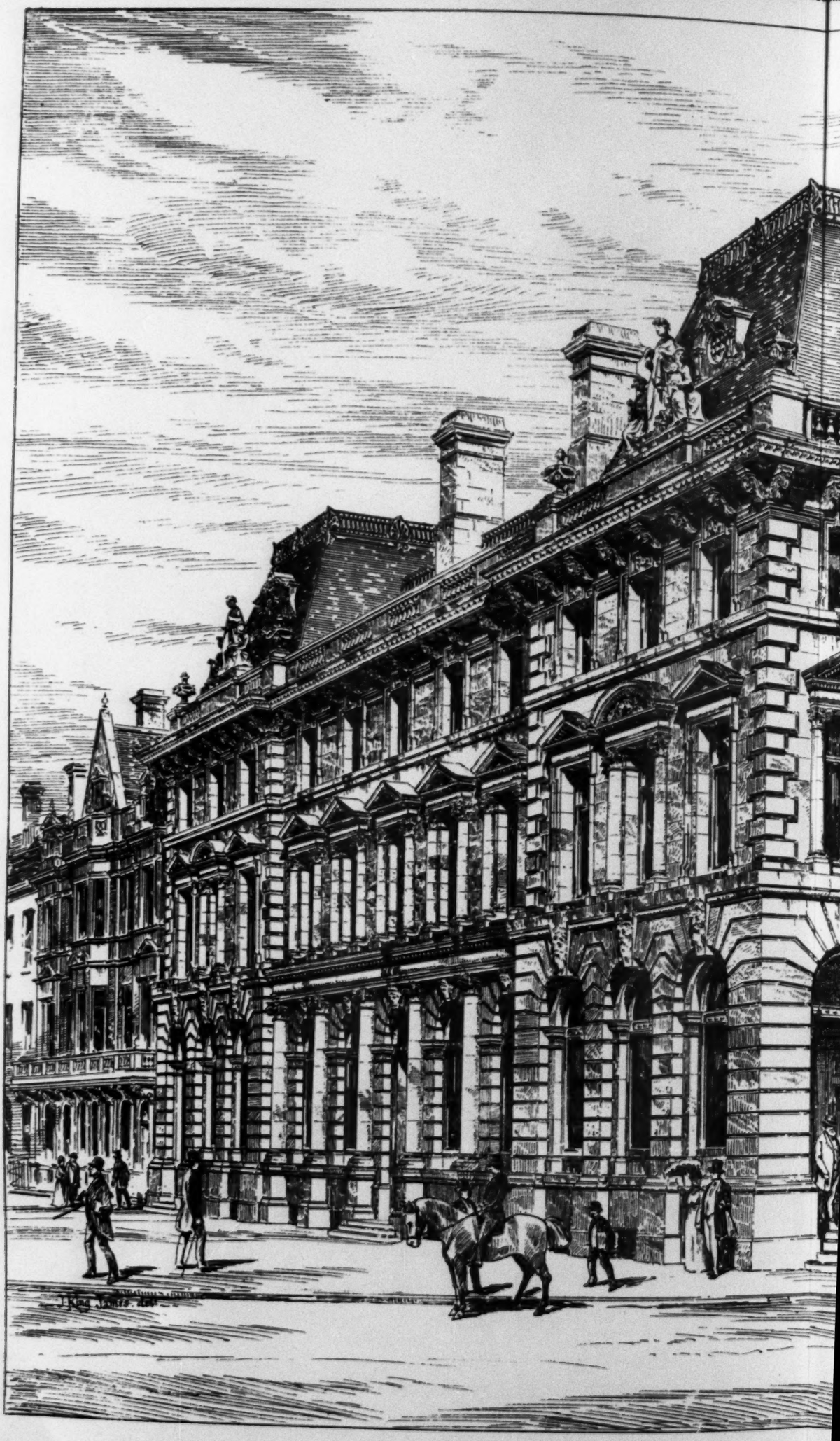
The solid walls of the church have undoubtedly been of vast service in preventing the farther spread of the fire.

The occurrence of a fire in the City now appears to mean a calamity of no ordinary kind. The widespread mass of ruin behind the church indicates how rapidly a fire spreads, and how impossible it is beginning to be for even a large force of steam fire-engines to restrict the flames to the site of the first outbreak. The lofty buildings with their sides and fronts more or less pierced with large windows, necessary for light, render them almost as ready a prey to conflagration as were the timber buildings of olden times. When shall we learn to widen the narrow streets of the City, and, in addition, to adopt some system of decentralisation which will prevent so great a mass of buildings being crowded together in the limited area of the City?

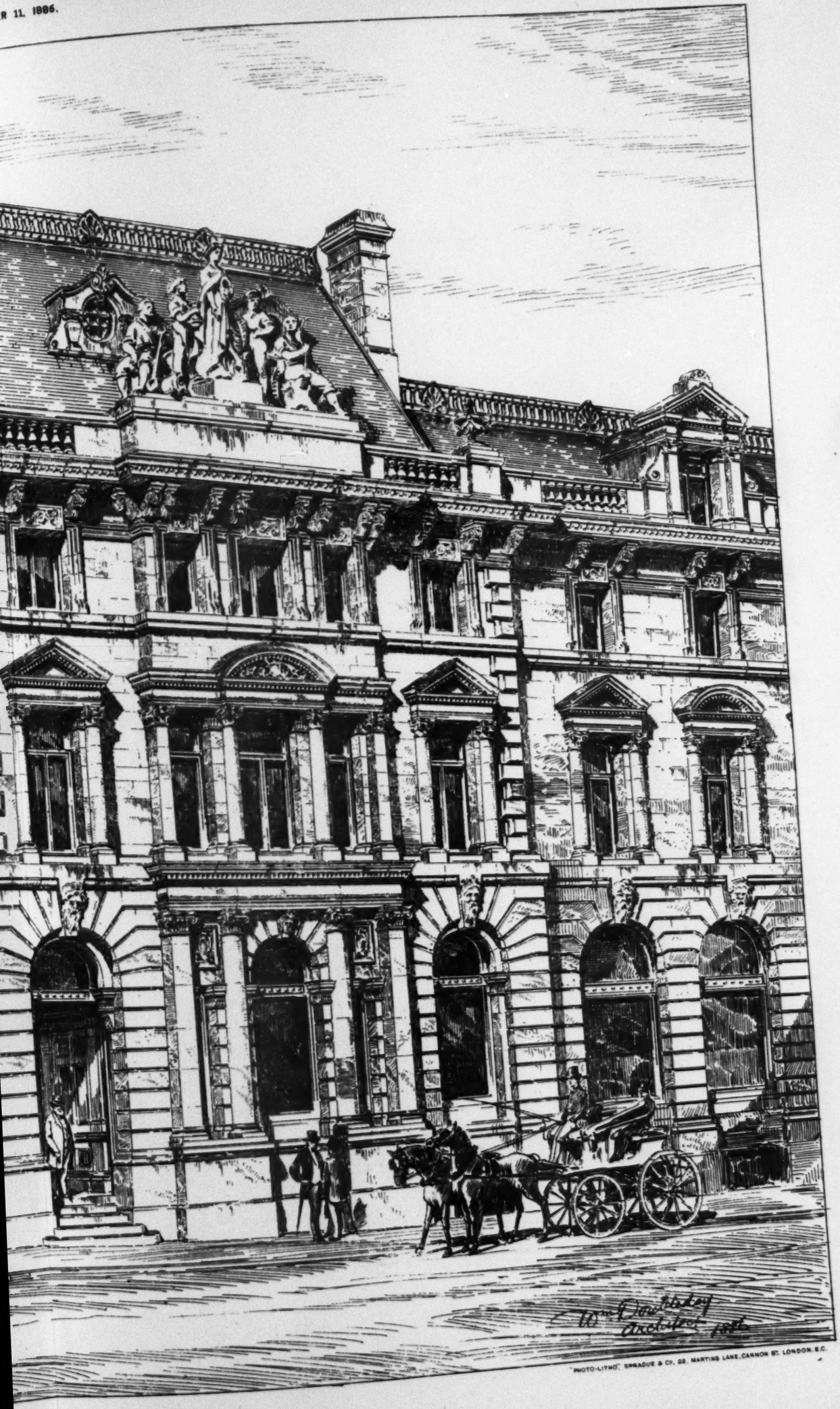
Archæological Discovery in Russia.—During some recent excavations at Cherson, in Southern Russia, at a spot where the rivers Koschewoya and Korabelka join the river Dneiper, the remains of an old town have been discovered. The streets are very regular and run towards the river, whilst in the houses utensils, sculpture, and coin have been found, which indicate that the town once situated here was a Greek one.

"PHOTO-LITHO." SPRAGUE & CO., 22, MARTINS LANE, CANNON ST., LONDON, E.C.

THE DONJON, LOCHES.—From a Drawing by Mr. A. Beresford Pite.

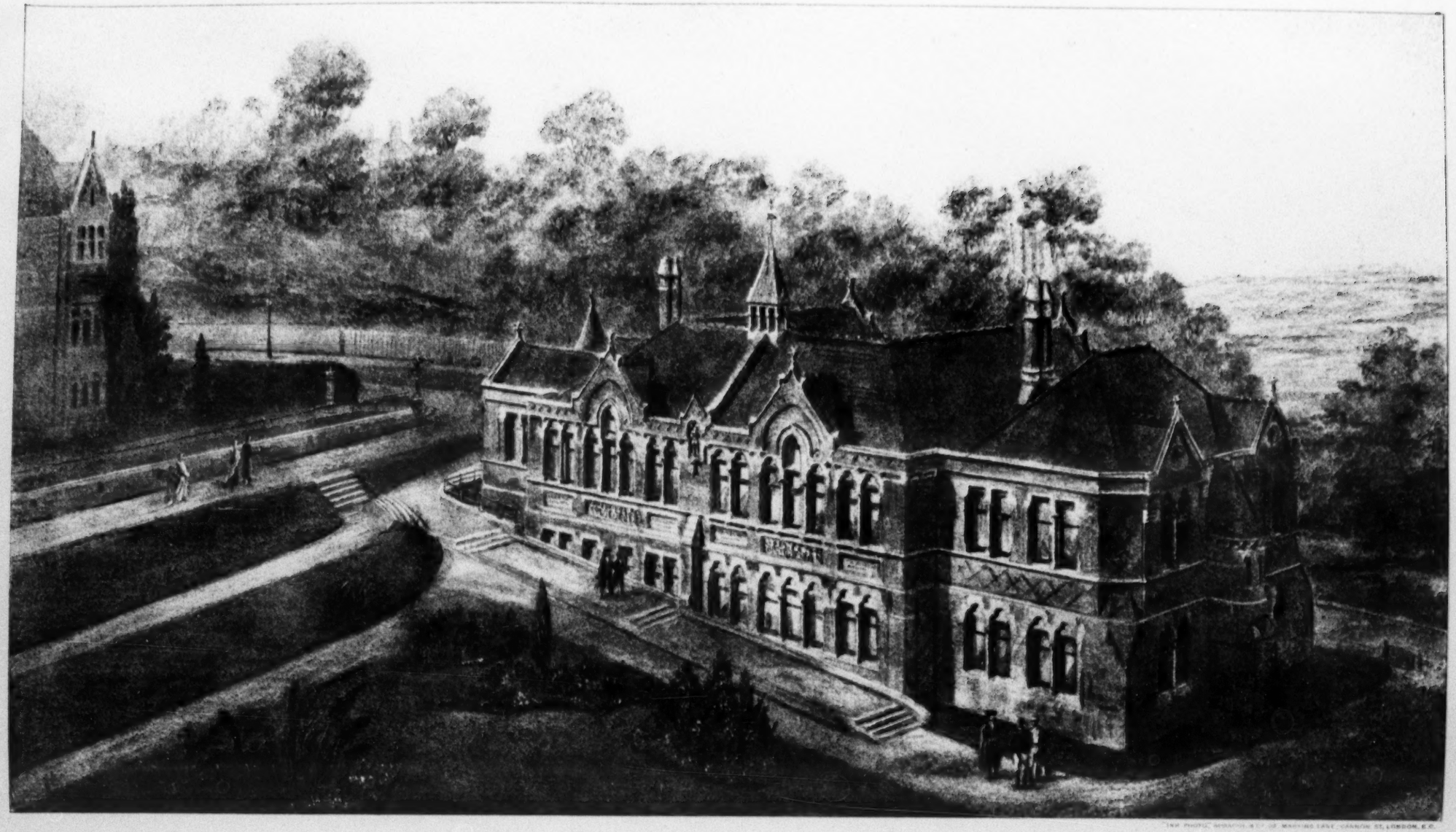


THE STAFFORDSHIRE JOINT STOCK BANK, BI



"PHOTO-LITHO" SPRAGUE & Co. 22, MARTINS LANE, CANNON ST. LONDON, E.C.

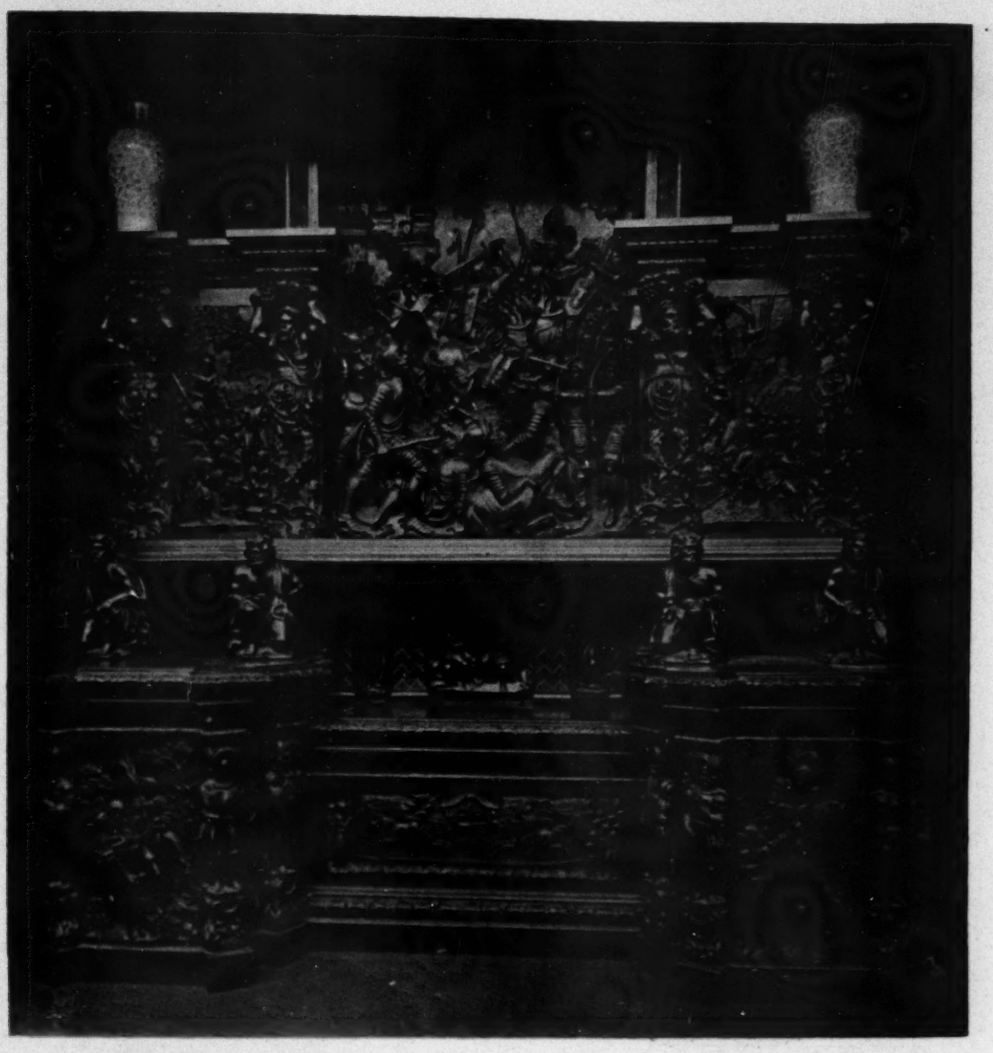
BANK, BIRMINGHAM.—Mr. Wm. Doubleday, Architect,

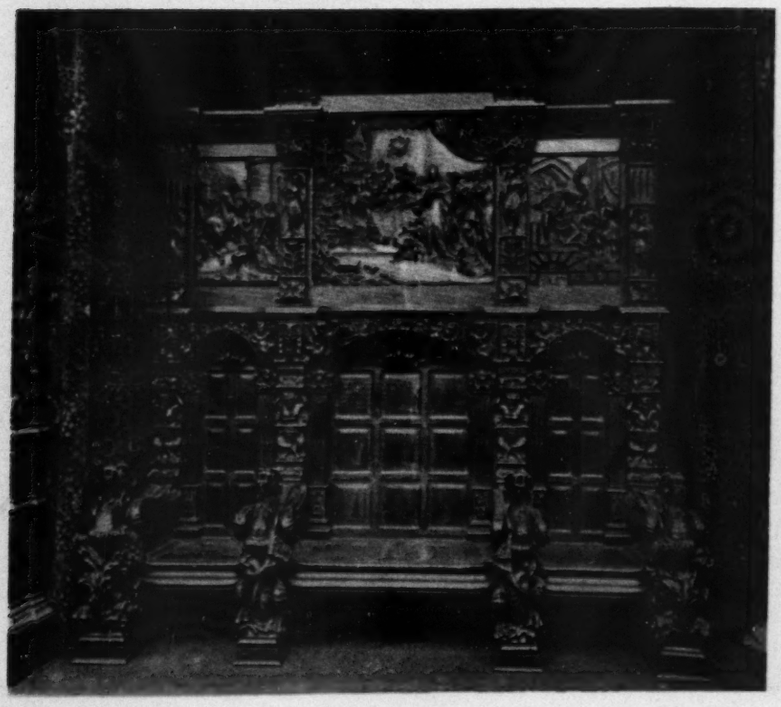


NATURAL SCIENCE SCHOOLS, HARROW.—Mr. Charles Foster Hayward, F.S.A., Architect.

THE PHOTOTYPE CO., 23, STRAND, 23, LONDON.

STAIRCASE OF THE MAIRIE, NEUILLY.—MESSRS. DUTOCQ & SIMONET, ARCHITECTS.





SIDEBOARD

AND

CABINET

EXHIBITED AT THE

EDINBURGH

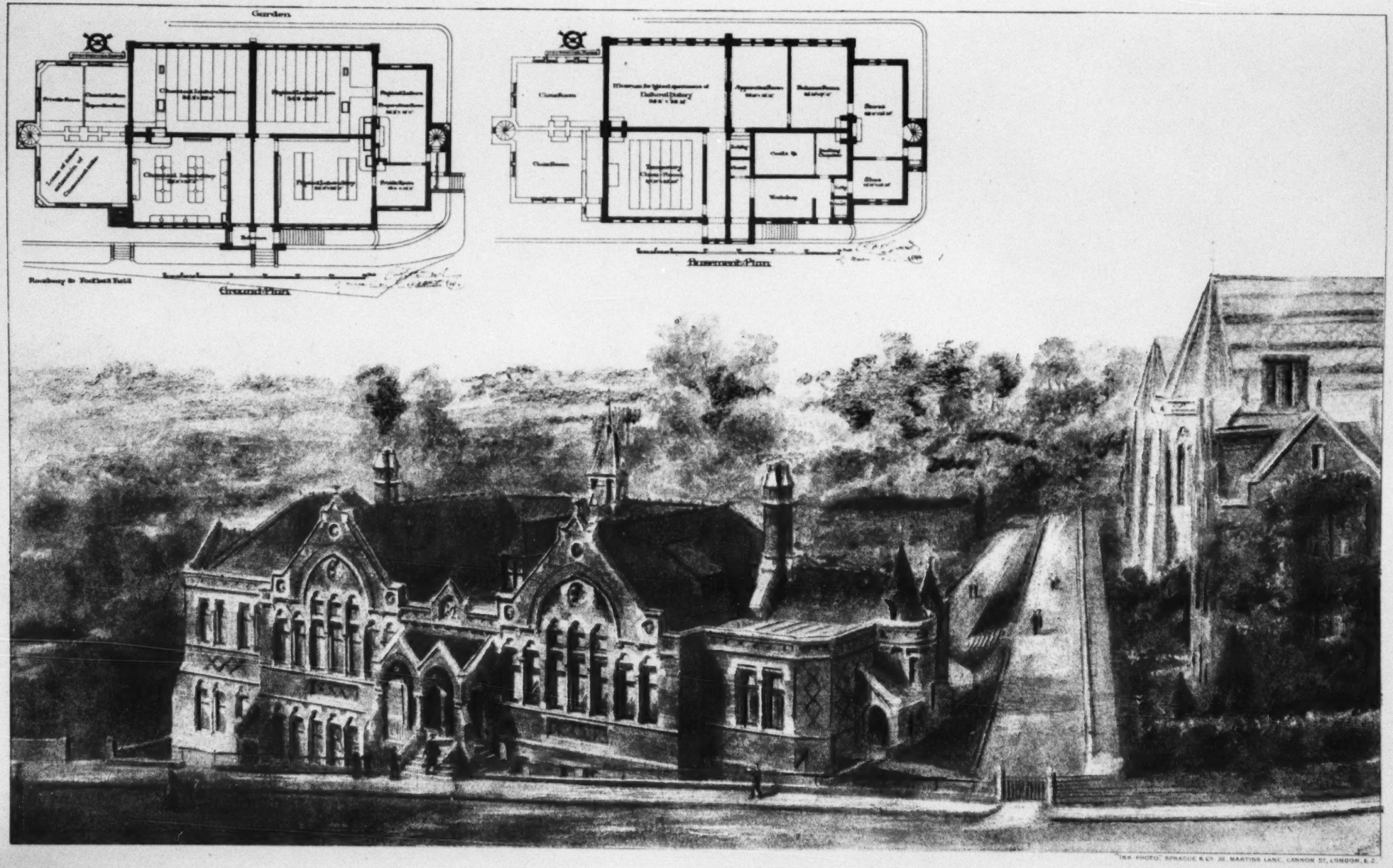
EXHIBITION

EXECUTED

BY

Mr. W. ADAMS.

THE PHOTOTYPE CO., 338, STRAND, 338, LONDON.



NATURAL SCIENCE SCHOOLS, HARROW.—Mr. Charles Foster Hayward, F.S.A., Architect.

PHOTO-LITHO SPRAGUE & CO. 20 MARTINS LANE CANNON ST. LONDON E.C.

NEW ALMSHOUSES AT FULHAM.—Mr. J. G. Hall, A.R.I.B.A., Architect.

Illustrations.

STAIRCASE, THE MAIRIE, NEUILLY.

THIS is the main staircase of the Mairie or Hôtel de Ville of the suburb of Neuilly, Paris, of the exterior of which an engraving was given in the *Builder* for January 2nd of this year, and which was fully described in our issue of that date.

The illustration is reproduced from a sepia drawing by the Phototype process, and is given here partly to give our professional readers an example of the manner in which water-colour drawings of a high class can now be reproduced in our pages, as illustrations of contemporary architecture.

SIDEBOARD AND CABINET.

THIS sideboard and cabinet are a portion of some furniture exhibited at the recent Edinburgh Exhibition, for which their maker, Mr. W. Adams, received a gold medal.

The sideboard is carved in oak, the panels illustrating scenes from "Ivanhoe," and the angle figures of the pedestals represent Gurth, the Templar, King Richard, Friar Tuck, Robin Hood, Ivanhoe, Athelstane, and Wamba.

The first pedestal panel represents "The old Jew writing out the order for the Horse and Armour,—he and Ivanhoe mounted on mules."

The second pedestal "Wamba receiving the horn from the Black Knight in the forest."

The centre panel shows the "Lists at Ashby."

The large centre panel shows in bold relief the seige of the castle of Tarquilstone.

The panel under the shelf shows the "king and Friar Tuck making merry in his cell," the friar singing his song.

The panels on the right and left show the division of the spoil; the friar taking in the Jew with a halter after finding him in the ruins, and the king attacked in the forest; Waldenar, Fitzguise, and Wamba hamstringing the horse; the whole surmounted by richly-carved cornice.

The Hall Cabinet and Settle has four heavy Griffins, with extended wings supporting arms, which terminate in handsome satyr trusses supporting heavy arched frieze, carved in bold relief in ornament and Cupids, with plain frame seat and backs. The upper part, formed by three handsome carved panels showing the assassination of Edward the Confessor on the left; in the centre, the trial of Queen Catherine; and on the right, the death of Prince Arthur, divided by richly-carved trusses supporting heavy carved cornice.

The illustrations are reproduced from photographs by the phototype process.

THE STAFFORDSHIRE BANK, BIRMINGHAM.

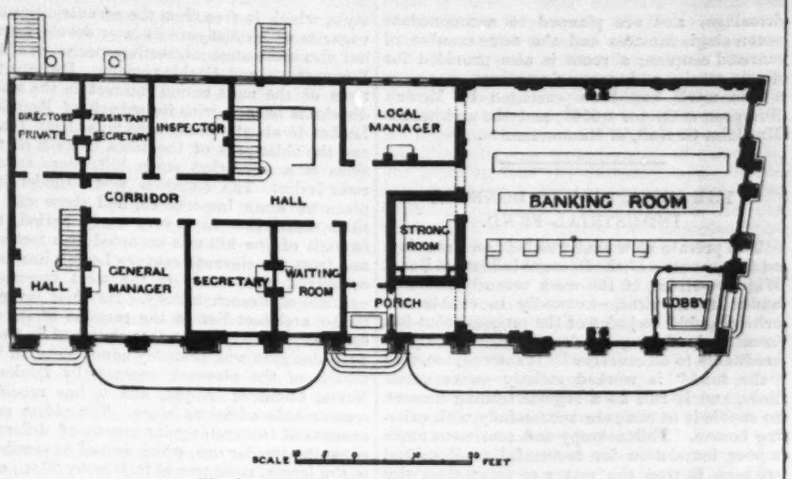
THIS design for the new premises for the Staffordshire Bank was selected in a limited competition. The building is now completed.

On the ground floor is the banking-room, entered by a lobby from Temple-row. The arcade formed by the external windows is repeated on the inside walls, the piers consisting of coupled Ionic columns. The same design is continued round the two blank sides of the room. The somewhat elaborate ceiling is a constituent part of the fireproof floor above. This is of one span without columns, and no timber is used in its construction.

The richly-panelled dado and all the fittings are of mahogany, and the work above, including the fluted pilasters, capitals, cornices, and ceilings, are of Parian cement. The local manager's room and one strong room open directly from the banking-room. The corridor beyond, with side entrance from St. Philip's Churchyard, gives access to the directors' staircase and to the offices of the general manager, the secretary, and assistant secretary, inspector, waiting-room, and directors' private room.

The furniture and marble chimneypieces of these rooms have been specially designed by the architect. The chimneypieces are by Mr. John Ward, of Birmingham, and the fittings by Messrs. Plucknett & Co., of Warwick.

The public portion of the bank floor is laid with Ebner's marble mosaic, while the space behind the counter is laid with wood-block flooring. The halls and corridors of ground floor are laid with ceramic mosaic by Craven, Dunnill, & Co.



The Staffordshire Bank, Birmingham.—Plan.

The entire ceilings over basement and ground floor are fire-proof, and wood blocks are used for flooring in all the principal rooms.

In the basement are a strong-room, a large fireproof room, extensive stationery stores, clerks' luncheon room, messengers' room, lavatory, water-closets, and heating apparatus.

The heating is by hot-water coils, executed by Messrs. Jones & Attwood, of Stourbridge.

On the first floor are the board-room, the shareholders' meeting-room, ante-room, waiting-room, lavatory, &c., and directors' room.

The resident managers' house consists of large dining, drawing, and breakfast rooms on the first floor, and kitchens, &c., and eight bedrooms, bath-room, &c., on the floor above.

A concrete flat over a considerable part of the first floor is divided into two portions, one forming kitchen-yard, with coal-shed and lift from basement, the other being reserved for house garden and conservatory.

The two elevations, 123 ft. and 48 ft. long respectively, are of Bath stone.

The three sculptured groups represent Manufactures, Agriculture, Art, and Science, and are by Mr. Joseph O'Reilly.

The contractors are Messrs. Wm. Bissett & Sons, of Sheffield; the ornamental ironwork is by Messrs. Hart, Son, Peard, & Co. The clerk of works was Mr. Samuel Clapp.

The illustration is from a drawing by Mr. J. King James. The architect is Mr. William Doubleday, of Birmingham.

THE NATURAL SCIENCE SCHOOLS, HARROW.

THESE schools, of which we give views and plans in our present issue, were part of the outcome of the tercentenary celebration of the foundation of the school, by John Lyon. In commemoration of this event a large subscription was raised in the year 1872, and works taken in hand for the benefit of the school. Amongst these were a gymnasium and workshop, designed by Mr. C. F. Hayward (see *Builder* for year 1875, Jan., p. 74, with illustrations), and also the Speech-room, by the late Mr. W. Burges, for which latter work so large a proportion of the funds collected were appropriated that it left less than was really requisite for these science school buildings. Thus, a portion of the building required to finish the chemical side was left unbuilt, and from circumstances which have arisen cannot now be completed as actually designed by Mr. C. F. Hayward, the architect, and as intended by the committee who appointed him to carry out the work. This is shown in outline upon the plans, but entire in the views.

The arrangement of the plan as adapted is the result of much consultation with scientists and specialists (the advice of Spottiswoode, Tyndall, Liebreich, and others, being obtained), and also of the careful examination, by the architect, of buildings erected for a similar purpose at Oxford, Eton, and elsewhere, together with much thought and deliberation of Mr. G. Griffiths, the Physical Science Master, and others. The two halves of the building, into which it is divided by a central line and double porch, are nearly identical in size and arrangement on the ground floor, and comprise for *each* department—Physical Science and Chemistry,—a lecture-room, 34 ft. by 25 ft.; preparation-room, 28 ft. by 15 ft.; laboratory, 28 ft. by 26 ft.; and private rooms, all without any floor overhead, the one great point (at that date) being to keep any buildings low and unobstructive to the fine views of London obtained from the site selected.

In the basement, which at one part is quite out of the ground while in the other almost entirely below it, owing to the steep slope of the hill, are rooms intended for the care of apparatus, about 25 ft. by 17 ft. each; and one for a typical museum, 34 ft. by 25 ft.; class-room, about 28 ft. by 25 ft., &c.; but these have been from the first appropriated as classical and other class-rooms till further class-room accommodation could be built.

The site was a difficult one, being a steep sloping garden, upon a subsoil of running sand, amidst stiff London clay, and it required special skill and local knowledge, which the architect, having built much previously in the neighbourhood, and with the help of a good local builder, was able to insure, the result being perfect stability. It was known that too much or too little drainage, or any carelesness in adjacent excavations, would be highly detrimental to the structure, so that when new bulidings being about to be erected close by (instead of the extension originally intended by Mr. Hayward, as shown upon the plans in outline only) excessively deep excavations were made without any shoring of these existing adjacent buildings, it was a necessary consequence that cracks should appear in all directions, as they accordingly did, and the buildings would have been entirely ruined except for great and hasty temporary support from shoring, and since from the more permanent arched buttressing recently erected.

In carrying out the work economy was so much insisted upon that the chief ornamental work, though only enough indeed at first to keep up the character of the adjoining school buildings, had to be cut out and everywhere brick substituted for stone, so that the building erected is not, in detail, precisely similar to the views which we give. The bricks were specially selected of a deep crimson red, so as to tone better with the surrounding greenery than the glaring "brick" red now so often adopted. The architect is Mr. Charles Forster Hayward, and the builder was the late Titus Lander, of Harrow, a "worthy" man and an honest builder in his day. Dr. H. Montagu Butler, the present Dean of Gloucester, was the Head Master of the school under whose auspices and vigorous management the same architect and builder had previously carried out the Sanatorium and other school works at Harrow.

ALMSHOUSES, FULHAM.

WE give this week an illustration of the Fulham Waste Land and Lygon Almshouses recently erected in the Fulham Palace-road, to replace those originally built in Dawes-road, which had become dilapidated and were in other respects unsuitable.

The new buildings are of brick, with stone

dressings, and are planned to accommodate seven single inmates and the same number of married couples; a room is also provided for divine service and trustees' meetings.

The work has been executed by Messrs. Stimpson & Co. for 2,653*l.*, and the architect is Mr. John G. Hall, of Hammersmith.

THE WORK OF THE DONEGAL INDUSTRIAL FUND.

The private view that was held on Saturday, on the premises of the Donegal Industrial Fund, Wigmore-street, of the work recently executed under its auspices,—avowedly to enable the critical public to judge of the progress that has been made during the last year,—was highly creditable to all concerned. It showed, too, that "the fund" is worked strictly on economic lines, and is run as a regular trading concern to enable it to compete successfully with existing houses. Philanthropy and sentiment make a poor foundation for successful trading, and we take it that the reason so many otherwise good schemes fail is because the promoters attempt to supplant other trading concerns, but neglect to use the means whereby success in that particular is assured. People will not continue to buy goods, even though made by distressed ladies, if they do not get a good return for their money, and the Donegal Fund appeals to the public on other than sentimental grounds, for it professes to give full value for the money spent. We are in entire sympathy with the movement, as a movement, in its two-fold attempt,—first, to enable the Irish workers to make use of their own raw material, and, in the second place, to restore the almost extinct village industries. Ireland has too long exported her raw produce instead of using it herself, and so getting all the wage-earning power possible out of the raw material for her own workers,—an important point, and one not sufficiently noted when considering the distressed condition of Irish peasants and possible remedies for this state of things. The work executed under the auspices of the Donegal Fund is the produce of the district (the wool used is that from the Donegal sheep, which is spun, woven, dyed, and embroidered in the district), and is wrought by the villagers in their own homes, so that the important element of "individualism" is not eliminated in the work produced. The best praise we can give the work we saw on Saturday is to say that it has "character." The embroidery designs are many of them adapted from old Celtic patterns,—the Kells Bible, illuminated by St. Colomb in the seventh century, has been largely drawn upon,—but there are many patterns derived from Oriental and Sicilian sources which are also successful. Special attention is given to the dyeing of the fabrics, and the promoters appear to have successfully overcome the technical difficulties that have hitherto attended the dyeing of flax,—a material largely employed by the Donegal people in their embroideries, owing to its brilliancy and cheapness. Curtains, portières, bed coverlets, and rugs are some of the uses to which the work is put, and the Fund makes a spécialité of "dyeing" to order, to suit any decorative scheme.

LOCHES.

There are few districts that offer so many features of interest to the students alike of history, archæology, and architecture, as that portion of France situated on both sides of the river Loire, between Orleans and Angers. The close connexion of the old French provinces of Anjou and Touraine with the Norman kings of our own country causes the whole district to abound with reminiscences of the time when England was not much more than an appanage of the Dukes of Normandy. The archæologist will find scattered about among the fields and villages several of the most interesting remains of the Celtic inhabitants of the country, the so-called dolmen of Bagneux being the largest monument of its kind. This is really a covered chamber, measuring 65 ft. 7 in. by 23 ft. by 10 ft. 8 in. high. The whole of this structure is now composed of twenty huge blocks of sandstone, of which sixteen, set up vertically, form the sides, and four the roof, while one other stone which has fallen down probably formed the covering of a small vestibule. The architect will find many examples, not only of the best work of the Early French Renaissance style, which is free from the eccentricities and vagaries which disfigure its later developments, but also some most interesting specimens of the Romanesque and Gothic periods. Perhaps the town of the most varied interest in the whole district is Loches, with its suburb of Beaulieu. Loches is about twenty-nine miles from Tours, and the older part of the town is built on the sides of a somewhat steep hill, close to the river Indre. The situation would render it a place of some importance, and there can be little doubt that at a very early period the summit of the hill was occupied by a fortress, and from the eleventh century Loches has been connected with many of the most important episodes of French history. Its chief interest to the architect lies in the remains of its old dungeon, and in the collegiate church of St. Ours. This dungeon was probably commenced in the middle of the eleventh century by Foulques Nerra, Count of Anjou, and it has received considerable additions since. The oldest part consists of two rectangular towers of different sizes, the smaller one, which served as vestibule to the larger, measures 41 ft. 6 in. by 23 ft., and the other is exactly double the size. The latter is now 131 ft. in height; it is strengthened at the angles with semi-cylindrical buttresses, and there are indications of the walls having been originally crowned with a projecting cornice supported on corbels. Each tower originally contained four stories, the floors and vaulting of which are now entirely destroyed, though the rake of the stone staircase which gave access to the floors is still clearly discernible. On the second floor of the small tower was situated the chapel, the walls of which were decorated with frescos. In the large tower it appears at first sight as if the level of the first floor had a considerable inclination from one side to the other, and various reasons have been given to account for this peculiarity. It is, however, much more reasonable to suppose, —as has been suggested by M. Baillargé,—that the floor was really level throughout, but that along one end, where the embrasures existed overlooking the open country, there was a raised stone platform to enable the soldiers the better to observe and attack an approaching enemy. The toothings of this platform with the wall are still visible, and give the impression of the floor having been on the slope. The walls are now nearly 9 ft. thick, but originally they were only about 6 ft. thick, as Louis XI., who largely added to and strengthened the fortress, increased the thickness of the walls, the junction of the new work with the old being clearly visible. The same king also excavated numerous cells in the rock, which served as prisons for many celebrated men, and their walls are covered with inscriptions cut by the inmates. In one of these "black holes" was placed one of the celebrated iron cages invented by Cardinal la Balue for Louis XI., and one feels a certain amount of grim satisfaction on learning that by a freak of fortune the same cardinal was the first to be immured in one of his own cages. On the southern side the fortress is defended by a fosse, and a very strongly fortified wall, flanked by large towers, which are interesting as being almost the earliest example in which the ogival form is given to such towers instead of the circular; these date from the thirteenth century. The illustration which we publish, reproduced from a pen drawing by Mr. A. B. Pite, shows this side of the fortress.

Near the northern extremity of the hill on which the château of Loches is situated, is the Collegiate Church of St. Ours, one of the most interesting in France to the student of church architecture. It is recorded that a church dedicated to St. Mary Magdalen was erected at Loches in the year 450 A.D., but this was pulled down by Geoffrey I., Count of Anjou, and a new one built in 965 A.D., part of which remains to the present day. This is the lower part of the main wall of the nave, which shows masonry of large irregular-shaped stones, with very thick projecting mortar joints, which are as hard as the stone itself. Towards the close of the twelfth century, a considerable portion of the church was rebuilt by Thomas Pactius, prior of Loches, and, although it has been frequently restored since then, the general character of his work has been retained. In front of the church proper is a square narthex or porch, of the full width of the church, and with a roof vaulted in pointed arches, with plainly-moulded ribs. As is so often the case in the Transitional period, we find that the round arch is retained in the main doorway, which is a very elaborate specimen of its kind. It is recessed in three planes, and small circular shafts are used in the jambs, the capitals consisting of conventional foliage and grotesque heads. Both the capitals and the heavy impost mouldings are continued through the whole jamb, and stop on each side against a corbel carrying a statue. The archivolts are elaborately enriched with sculpture of a very quaint design, comprising grotesque figures, monsters, grinning heads, &c. The upper part of the spandrel between the door arch and the pointed wall rib of the porch has a group of sculpture, which has been so much mutilated that it is impossible to tell precisely what was intended to be represented. The interior of the church is very peculiar, in fact, almost unique. The first bay forms the lower part of the west tower, and there is also a central tower at the crossing of the nave and transept, but between these towers the nave proper consists of two square bays, separated by an arched opening. Each bay is separately covered by a hollow octagonal stone pyramid, a sort of compromise between a dome and a vault. We believe this is the only instance known of this method of evading the difficulties which were inherent in the construction of vaults before the pointed arch had become thoroughly established. There is no doubt that this portion of the church was built before the porch which has been already mentioned. The apse and the aisles are all of much later date. The illustration which we give shows the towers and the two pyramidal roofs over the nave.*

Loches also contains some interesting examples of sixteenth-century work,—the Tour St. Antoine and the Chancellerie being the most worthy of examination. About a mile from Loches are the ruins of the old Abbey Church of Beaulieu, with some interesting remains of twelfth-century work.

HAMPSTEAD PUBLIC BATHS COMPETITION.

The competitive designs for these buildings were exhibited at the Vestry-hall, Haverstock Hill, on Monday and Tuesday last. The competition is a private one, ten architects having been invited to prepare designs, of whom eight have responded to the invitation, one sending two schemes.

The conditions ask for men's first and second class swimming-baths, each to be 100 ft. by 35 ft.; and a women's bath, 60 ft. by 25 ft., as well as forty-five private or "slipper" baths, divided into two classes for each sex, or four suites in all. Administrative offices, superintendent's residence, and laundry and engine-house, were also required. The site, which abuts on the Finchley New-road, is a long narrow strip, about 320 ft. deep by 70 ft. wide for the greater part of its length, but narrowing off to 28 ft. of frontage only; it falls quickly from front to back, the difference being as much as 30 ft. at one point. The cost was not to exceed 12,000*l.* Most of the competitors have dealt with the problem of the planning and general arrangements with considerable success, and in this respect the average of merit is high.

Taking the designs in the order in which they are hung: "Suitability, Design A," puts the men's second-class swimming bath and the private baths all together at the back of the site, reached by a long corridor from a separate entrance in the front; the women's bath is placed across the site in the middle, and the men's first-class bath in front, immediately behind the administrative block. The general arrangements and grouping are open to one grave objection, namely, that all three entrances, including that for the women, are side by side.

The design marked with the device of a triangle in a circle is similar to the last in the main features of its plan, but the details, especially as regards the entrances, are better. The elliptical trusses of the roofs over the swimming baths seem to be intended to be of timber, but no construction is shown, and it

* Viollet-le-Duc has the following remark on this church:—"Il est en France précisément dans la limite séparant les édifices à coupoles de ceux qui n'en comportent pas un monument unique, étrange, dans lequel viennent, pour ainsi dire, se fondre les influences de l'art oriental avec les méthodes de construire adoptées dans le nord au commencement du douzième siècle: c'est l'église de Loches."

may be doubted how they could be put together so as to stand. The elevation to the road would make an effective group.

"Practical" has a plan which is excellent in every respect, except as regards the entrances, which are practically side by side The women's swimming-bath and both classes of private baths are in the front of the site, so that they are the most easily reached, and the waiting-rooms are very conveniently placed; the men's first-class baths are similarly grouped together behind the women's, and the men's second-class baths are in the rear of the site and reached by means of a corridor. The elevation shows a not ineffective brick front with a tower and high-pitched gable; some objection might be taken to the rather heavy timber trusses of the roof over the men's first-class bath; but, on the whole the design is a very good one.

"Felix" has placed the men's first-class bath at the back, the second-class one next, and the women's bath in front; the private baths are badly arranged in a kind of galleries over the women's and the second-class men's baths. The best thing about this set of drawings is the drawing of the effective pen-and-ink views; the front elevation is pretty, but hardly appropriate or of sufficient importance. We noticed also the light, well-designed, iron roofs of the swimming-baths.

"Progress" has a plan similar in its main lines to "Suitability." The accesses, waiting-rooms, &c., are well-arranged, and the approaches for men and women kept well separated. The roofs of the swimming-baths are rather heavy in appearance, but the design is, on the whole, a good one.

"Cavendo Tutus" has also managed the entrances and separation of the sexes carefully, but some of his other arrangements are open to objection; and the design, on the whole, would bear further thinking out.

"Suitability, Design B," by the same architect as the first we mentioned, is an attempt at a remarkable engineering feat, the proposal being to erect one of the large swimming-baths over the other, and to carry the brick tank, with its immense weight of water, upon iron columns. We do not question the possibility of such a thing, but we find it difficult to credit that the building would cost 350*l*. less than the author's other design, as he thinks it would. The object aimed at is apparently the inadequate one of getting a roadway on one side of the building to the laundry and engine-houses, which are situated in the rear; the remaining arrangements of the building are not satisfactory as regards either lighting or arrangement, but the neat elevation is better than most of the others.

"Aquarius" has one of the best plans, if it were not for the mistake of providing but one entrance for the use of both sexes, which are only separated at the bottom of a staircase well inside the building. There are sensible light iron roofs to the swimming-baths, and the brick Gothic elevation might look well, though it wants height and importance.

MISS HARRISON'S LECTURES AT SOUTH KENSINGTON.

THE last of these lectures was given on Wednesday. A short account of the first appeared in our issue of November 20th. Miss Harrison had dealt with the legends centering round the first earth-born kings of Attica, Kekrops, and his successor Erichthonios, during whose reigns the worship of Athene had gained firm hold of the Attic race. In her second lecture, Miss Harrison passed on to Pandion, who came after Erichthonios, and in whose reign the worship of Dionysos and Demeter, marking a further advance in civilisation, was introduced into Attica. Of the great struggle between Eumolpos, king of Eleusis, son of Poseidon, and Erechtheus, the successor of Pandion, there is no representation in vase-paintings; but one of the finest works of the potter Hieron, a *colytos* in the British Museum, embodies for us the peaceful side of this period of Attic mythology. On the obverse the young god of agriculture, Triptolemus, on his winged car drawn by serpents, is being sped on his way to sow the grain on the earth by Persephone and Demeter, attended by the nymph of the land *Eleusis*. On the reverse, under the one handle sits Eumolpos, in peaceful attitude; facing him under the other handle is his father, Poseidon; standing between the two are Amphitrite, Zeus, and Dionysos. After the war with Eumolpos, land and sea seemed at peace. Once again we find them face to face, not in strife, but in emulous rivalry, for both Aigeus, king of Athens, and Poseidon claimed each as his son the great Attic hero Theseus. Miss Harrison illustrated the two-fold mysterious parentage by two vases. One, the famous *cylix* by Euphronios (Louvre), representing Theseus borne down triumphantly by a Triton, special messenger of Poseidon, to the very presence of Amphitrite, to fetch the ring Minos had thrown into the sea, proved how readily the sea-god acknowledged the young hero as his son. The interior of the *cylix* (Berlin) showed Aigeus sorrowful at his childlessness, consulting the oracle of Themis. On his way home Aigeus married Aithia, daughter of Pittheus of Trœzene, and their son was Theseus. The heroic adventures of Theseus on the road from Trœzene to Athens, together with the contest with the Marathonian bull, are embodied in a *cylix* by Duris (British Museum). The *centre* of the *cylix*, being the most prominent place, is given to the slaying of the Minotaur, the crowning deed of the career of Theseus. This slaying of the Minotaur is one of those legends which, typifying as it does the struggle of East and West, was of pan-Hellenic importance; therefore we find it represented, not only in the work of the vase-painters of the fine Attic period, but also in the earliest archaic art, long before any other of the exploits of Theseus had received an artistic form. Theseus, the brave young hero of the West, overcame the hideous Eastern monster, the Minotaur, the man-eating creature, which is but another form of the god Baal, the embodiment of the fierce sun-god. This conception of the triumph of West over East we find again in the myth of Perseus and the Gorgon Medusa. Miss Harrison showed, as an example of the archaic treatment, a very ancient cup, a *skyphos* (Louvre), where Theseus, represented as a bearded man, is in the act of slaying the Minotaur. He is being watched by Ariadne, on one side, and by two rows of Athenian captives on the other. The next illustration, from a *krater*, recently found on the Acropolis, showed how in the work of the fine period Theseus was conceived as a lovely youth. The love and desertion of Ariadne led to a comparison between the celebrated Vatican statue, where Ariadne is represented in troubled sleep, and a *cylix* of the fine Attic period (Corneto), where Ariadne, all unconscious of her human lover, who is just preparing to leave her, lies in peaceful slumber under a vine-tree, symbolical of the divine husband who is to comfort her. The two great contests which Theseus engaged in after he had become king,—that with the Amazons, and that with the Kentaurs,—Miss Harrison only touched on briefly, for they are adventures not peculiarly belonging to the Attic mythology. Theseus has to engage in these contests like every brave hero had done before him. The coming of Theseus to Hades, and his punishment, is found only on Lower Italy vases. One interesting vase, the Codros *cylix* (Bologna), links the name of Theseus with that of the last king of Athens, and with that of Menestheus, who supplanted him. In the centre the brave Codros is in the presence of Ainetis, probably the seer who prophesies his doom. On the obverse is Theseus starting on the exploit of the Marathonian Hill, while on the reverse Ajax and Menestheus are starting for Troy.

The fourth lecture Miss Harrison devoted exclusively to the heroines of Attic mythology. She pointed out that the legends concerned with them have the unity, not only of pathos, but also of origin, for they belong to the class of transparent nature-myths. First, the lecturer told the sad story of the two daughters of Pandion,—Prokne the swallow, with her boy Itylos, and Philomela the nightingale,—and the terrible vengeance they wrought on Tereus. The interior of a *cylix* (Louvre) showed the two sisters plotting their revenge. Passing to the daughters of Erechtheus, Miss Harrison showed the rape of Oreitheia by the god of the north wind, Boreas, as represented on an *amphora* in Berlin. In connexion with the more melancholy fate of Prokris, her sister, Miss Harrison examined the myth of Eos, who bears away or pursues Kephalos, the beautiful hunter, husband of Prokris. Eos, like Boreas, is another winged immortal creature, bearing away the beautiful mortal it loves,—a notion which has its counterpart in the rape of Ganymede by the eagle of Zeus. Miss Harrison pointed out carefully the two aspects of the dawn in the Attic myth, the cosmical and the human one, and showed how in the Blacas vase (British Museum) the two thoughts are combined. Helios, the sun-god who follows the dawn, is rising up from the sea, while at his approach Selene, the Moon, is striking; four little figures, embodiments of the stars, are plunging into the darkness, while in the foreground Eos, in her human aspect, is, as ever, pursuing Kephalos. In illustration of the mournful love of Prokris and Kephalos Miss Harrison showed first a vase from the British Museum representing the death of Prokris, who is sinking under her wound, with her father Erechtheus on one side and Kephalos on the other, while her faithful hound looks mournfully on. Lastly, she showed the beautiful picture by Piero di Cosimo, in our National Gallery, where, perhaps, the legend has received from an art which understood better how to deal with pathos some subtle additional touch which the Attic vase-painter had missed.

We are glad to hear that these lectures, which are among the most brilliant which Miss Harrison has ever delivered, are to be embodied by her in an introductory essay to her edition of Pausanias's "Attika." Miss Harrison has, in this course, dealt with a mythical period of the highest importance for the study of the history or of the monuments of ancient Athens, but one which, owing to the scantiness of any continuous literary record in Attic literature, and to the confused accounts of the logographers of a late age, is one of the most difficult to unravel, and for her clear presentation of it her audience must feel grateful. Miss Harrison not only treats myths in a scholarly and lucid manner, but also with a suggestiveness which imparts new life and meaning to the legends of ancient Greece, making even the best-known facts stand out in a new and unexpected light.

In the introductory part of the first lecture Miss Harrison had stated that the particular advantage to be derived from a study of vase-paintings in connexion with mythology was, to those unacquainted with the original Greek, and thus unable to go to the fountain-head for a knowledge of the literature, an original language, the language of art, to make up in some measure for the loss of the other; but that to classical students the advantage was two-fold, for they gained the language of art added to the language of literature, and each of these in turn would be found to embody some subtle thought or feeling which the other was powerless to render. This method of teaching, by close comparison of the literary and artistic form of a myth, is one which Miss Harrison is making peculiarly her own.

THE OFFICE OF SUPERINTENDING ARCHITECT:

METROPOLITAN BOARD OF WORKS.

AT the meeting of the Metropolitan Board of Works on the 3rd inst., the Works and General Purposes Committee presented a further report on the whole question of the appointment of a Superintending Architect, and recommended "That an advertisement, in the form herewith submitted,* for the office of Superintending Architect be inserted in the leading professional papers; that the age of the candidates be unlimited; and that the salary be 1,500*l*., inclusive of travelling and incidental expenses."

Mr. Edwards, the Deputy-Chairman of the Board, having formally moved the adoption of the recommendation,

Mr. John Jones said he took exception to the Committee's recommendation. What did they mean by saying that "the age of the candidates be unlimited"? He contended that "a Superintending Architect" was not an officer the Board was empowered to elect. The Building Act said that the Board was to elect "a Superintending Architect of Metropolitan Buildings." That was the exact title and description of the officer whom the Board was empowered to elect, and he must express his conviction that such an officer should not be saddled with the heterogeneous and foreign duties, ranging from the management of "baby-farms" to the valuation of properties required for street improvements, which the Board had from time to time imposed upon him. In his opinion the saddling of such

* For the advertisement, see p. xvi. of this week's *Builder*.

an officer with the miscellaneous (not to say ignoble) duties which had been imposed upon the late incumbent of the office would be sufficient to deter eminent architects and scientists in construction from competing for the appointment. He believed that by the adoption of the recommendation of the Committee the Board would be merely getting out of one difficulty into another, and he could not but feel that the Committee's previous action in the matter was not such as to entitle them to the confidence of the Board. The Committee, by having previously reported that out of the twenty candidates who made application for the appointment, they could not select the names of six gentlemen who were competent to take the post, had cast an aspersion upon the professional capacity of the whole of the candidates. ("No, no.") He concluded by moving, as an amendment, that the maximum age of candidates be fixed at fifty years.

Mr. Wetenhall seconded the amendment, and said he could not help thinking that the Board would not gain credit for its past action in regard to the matter. It was now some months ago since the late Mr. Vulliamy tendered his resignation, and men of the highest ability in the architectural profession had come forward as candidates, their applications being backed up by testimonials from leading men in the profession. What did the Committee mean by saying that the age of candidates was now to be "unlimited"? Did they want the office filled by a centenarian?

After some remarks by Mr. Tolhurst and Mr. Richardson, the motion to agree with the Committee's report was carried by 31 votes to 2.

Mr. Edwards said that, as the Deputy-Chairman of the Board, it was his duty to bring up the following recommendation of the Committee:—

"That the candidates who have already applied for the office and sent in their testimonials be informed that their applications will be considered, together with those which may be received in answer to the further advertisement, unless they express their wish to withdraw."

He could not move its adoption, as he did not agree with it.

Mr. Harben, however, moved its adoption, and this motion having been seconded, considerable discussion ensued, it being argued by Mr. Selway, Mr. Shepherd, and others, that the Board, having already adopted the report of the Committee declaring that there were not six suitable candidates amongst those who presented themselves in answer to the first advertisement, would be stultifying itself by the adoption of the present recommendation. Adopted it was, however, by 35 votes to 9.

The Works Committee further reported, stating that, having fully considered the reference by the Board as to the death of the Superintending Architect in connexion with the pension recently voted to him by the Board, they regretted that they were unable to advise the Board to take any action in the matter. This was agreed to; but later in the day it was resolved, on the motion of Mr. Richardson,—

"That it be referred to the Works and General Purposes Committee to consider and report as to the remuneration to be given to the representatives of the late Superintending Architect in consideration of his services given at the special request of the Board from and after the date of his resignation to the day of his decease."

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.

The opening meeting of this society for the Session 1886–87 was held at the society's rooms, No. 7, Westminster-chambers, on the 1st inst., when the President, Mr. E. H. G. Brewster, A.-M.Inst. C.E., delivered his inaugural address, in the course of which he gave a history of the society from its foundation in May, 1859, to the present time. Mr. Brewster then proceeded to describe some of the principal engineering works that have been recently finished, that are in progress, and that are proposed. His first category included the Canadian Pacific Railway, the reader pointing out the immense importance of it not only in peace, but in time of war. He then passed to the Severn Tunnel, referring to the extraordinary difficulties that had been met with in its construction; then to the Mersey Tunnel. The Forth, Tay, Putney, Battersea, and the Tower Bridges were next described, as was also the Hawkesbury Bridge, New South Wales, an interesting circumstance in connexion with which is that although it will be built by an American firm, all the steel for the superstructure will come from England. Passing on, the President next described the new waterworks at Liverpool, Manchester, and Hong Kong, and incidentally mentioned that when this colony came into the possession of the English in 1841 it was inhabited by only a few poor fishermen, whereas it is now the fourth largest shipping port in the world. The Panama Canal and many other important works were described, and on the conclusion of the address Mr. Twigg, M.Inst. C.E., proposed, in complimentary terms, a vote of thanks to the President. This was seconded by Mr. D. Gravell, A.-M.Inst. C.E., and carried unanimously.

The meeting then adjourned to the 15th instant, when Mr. M. A. Pollard Urquhart will read a paper on "Copper Production in the South of Spain."

THE OLD PALACE, CROYDON.

A committee has been formed with the view of preserving for Croydon, if possible, the old palace, banqueting-hall, guard-chamber, and chapel of the Archbishops of Canterbury. Some of the oldest work at this palace is composed of brick, of the time of Henry VI., and the eastern and western parts of the great court were some of the first brick buildings of that period. There was a vineyard attached to the palace early in the fourteenth century. Manning and Bray, the county historians, give two views, taken from the north and from the south, which show the architecture and the comparative proportions of the buildings fairly well. In the year 1412 Archbishop Arundel kept the captive king, James I. of Scotland, in confinement here. In July, 1573, the Archbishop Matthew Parker entertained Queen Elizabeth and her whole court retinue here for seven days. During the uncertain times of the Commonwealth the palace was leased to the Earl of Nottingham for an annual payment of 40*l*., and afterwards to Sir William Brereton, Colonel-General of the Cheshire forces. This tenant resided in the palace, and turned the chapel (which has a fine timber roof), into a kitchen. At the restoration of the Stuarts, Archbishop Juxon carried out considerable repairs, and many succeeding archbishops spent large sums of money in improving the property. Secker and Cornwallis, however, did not reside in this palace, and in the year 1780,—at which time it had ceased to be occupied by the archbishops for twenty years,—an Act of Parliament was obtained, vesting the palace buildings and two adjacent closes, in certain trustees, who were required to sell the same and apply the proceeds, according to specified directions, towards building a new archiepiscopal palace on Park-hill, the old site being found to be bad and inconvenient. In pursuance of the Act of Parliament, the trustees sold the site October 10th, 1780, to Abraham (afterwards Sir Abraham) Pitches, for a sum of 2,520*l*. The palace, with the servants' apartments, stables, gardens, court-yards, canal, and fishponds, covered a space of upwards of eight acres; the area in all, with the meadows adjoining, amounting to 14a. 1r. 17p. It is now used as a manufactory of printed calicoes, and a bleaching-ground. The Committee believe that many of the residents of Croydon who take an interest in local antiquities, and other lovers of Mediæval English edifices, would be glad to avail themselves of an opportunity of inspecting these ancient buildings in their present condition; it has, therefore, been arranged that they shall be open on Saturdays, the 11th and 18th inst., from two to four p.m. Mr. E. P. L. Brock, F.S.A., has kindly undertaken to conduct those who are provided with cards of admission over the site of the palace chapel, banqueting-hall, and guard-chamber, and to point out the features of architectural and historical interest in which the buildings abound. These cards of admission may be obtained on application to any member of the committee, viz., the Rev. J. M. Braithwaite, M.A., chairman; Mr. Alderman Layton, J.P., Mayor of Croydon; Alderman Dr. Benson, Mr. G. W. Leveson-Gower, F.S.A.; Mr. J. Pelton, J.P.; and others; or of the honorary secretaries, Mr. E. P. L. Brock, 36, Great Russell-street, W.C., and Mr. S. W. Kershaw, F.S.A., St. James's-road, Wandsworth Common, S.W. The entrance for visitors is by the banqueting-hall in the Old Palace-road, and tea will be served in the chapel at the close of the inspection.

THE ARCHITECTURAL ASSOCIATION.

The fourth meeting of this Association for the present session was held at 9, Conduit-street, on the 3rd inst., Mr. J. A. Gotch (President) in the chair.

The following new members were elected, viz.:—Messrs. Charles Bywater, C. J. Willett, Ethelbert Fagg, Thomas MacLaren, Alfred H. Clark, Vincent Craig, Herbert Goodman, G. E. Nield, C. M. Harvey, Ernest Marshall, Arthur Turnbull, R. O'Brien North, C. E. Audoire, Sidney French, Adrian Collins, J. M. Elton, J. D. Scott, H. S. Tiffin, C. A. Ligon, H. St. Clair Cory, R. D. Warry, John Borrowman, W. G. Morrison, C. H. Freeman, F. R. Taylor, and H. D. Lloyd.

Several donations of books to the library were announced, and votes of thanks were passed to the donors.

Mr. H. D. Appleton (Hon. Sec.) stated that the members would shortly receive the conditions and particulars of the additional prizes, viz.,—(1) The conditions on which the Aldwinckle Travelling Studentship would be awarded; (2) the offer of Mr. Blashill to give a prize of 10*l*. for the encouragement of the study of Italian architecture; (3) the offer of Mr. Cates to found a prize for the encouragement of members of the Association in the preparation for the R.I.B.A. Examination in Architecture; and (4) Mr. E. Turner's offer of a prize of 3*l*. 3*s*. for students of the elementary division.

On the motion of Mr. Cole A. Adams, a vote of thanks was passed to the gentlemen who had so kindly offered these prizes for competition.

Dr. T. Pridgin Teale then read a paper on "Fireplaces," inviting the meeting to follow each head by discussion, so as to thoroughly thrash out the subject. As the paper was substantially the same as the lecture delivered at the Royal Institution by the author early in the present year, and printed in the *Builder* for February 13th last, p. 285, we need not do more now than give the following rules laid down by him:—

(1) As little iron as possible; (2) the back and sides of the fireplace should be of brick or fire-brick; (3) the fire-brick back should lean over the fire, not lean away from it, and at an angle not greater than 70°; (4) the bottom of the fire, or grid, should be deep from before backwards, probably not less than 9 in. for a small room, nor more than 11 in. for a large room; (5) the sides or covings should be vertical, but inclined to one another as the sides of an equilateral triangle; (6) the slits in the grating or grid should be narrow, not less than ¼ in., nor more than ⅜ in. in width; (7) the front bars should be *vertical*, that ashes may not lodge and look untidy; *narrow*, perhaps ¼ in. in thickness, so as not to obstruct heat; and *near together*, perhaps ½ in. apart, so as to prevent coal and cinder from falling on the hearth; (8) there should be a rim 1 in. or 1½ in. in depth round the lower insertion of the vertical bars; (9) the chamber under the fire should be closed by a shield or "Economiser"; (10) whenever a fireplace is constructed on these principles it must be borne in mind that a greater body of heat is accumulated about the hearth than in an ordinary fireplace. If there be the least doubt whether wooden beams possibly run under the hearthstone, then an ash-pan should be added with a double bottom, the space between the two plates being filled with artificial asbestos, 1½ in. or 2 in. in thickness; (11) see that no woodwork comes within 10 in. or 12 in. of the back of the fire.

In concluding his lecture, Mr. Teale replied to some criticisms of his Royal Institution lecture which had appeared in other journals, and complained that from the Smoke Abatement Institution his stove,—which was open for use by all, without any royalty, patent, or restriction, and which he claimed to be applicable to every fireplace, and inexpensive,—had received no encouragement, but the contrary; and not even intelligent investigation.

In the animated discussion which followed each head of the paper as it proceeded, Messrs. Baker, R. P. Notley, W. Hilton Nash, Cole A. Adams, C. H. Brodie, G. A. Pryce-Cuxson, and others, took part.

A cordial vote of thanks to Dr. Teale closed the proceedings.

Macclesfield Church.—We are asked to mention that the wood-block flooring of this church (noticed by us a fortnight ago) was executed by Messrs. Geary & Walker.

COMPETITIONS.

Carlisle Market Buildings.—The Markets Committee have selected the plans submitted by Messrs. Cawston & Graham, of London, and Mr. Geo. Dale Oliver, of Carlisle, for the prizes of 100*l.* and 50*l.* respectively, for the best designs, with specifications and estimates, for the erection of new market buildings at Carlisle. There were thirty-five competitors.

The Yorkshire Penny Bank: New Premises at Halifax.—The directors of this bank having acquired a suitable site in Waterhouse-street, Halifax, invited a limited number of architects to compete for the commission to design and carry out the proposed buildings; the following firms were selected, viz.:—Messrs. Kelly & Birchall, Perkin & Bulmer, Smith & Tweedale, and Mr. W. H. Sharp and Mr. Kaye, of Leeds; Messrs. Milnes & France, of Bradford; and Messrs. Buckley & Son, of Halifax. The directors decided to give the work to the author of the design placed first, and to pay an honorarium of fifteen guineas to each of the unsuccessful competitors. At the general board meeting held on Friday last the designs by Messrs. Perkin & Bulmer were unanimously chosen. The building will consist of a bank with the necessary adjuncts, and over it two floors of offices to be let. The design is in Gothic style, and will be executed with wrought stone. At the rear of this building and separated by a wide area or court will be erected a substantial block, to be let as a wool warehouse. The total cost of the whole scheme will be about 7,000*l.*

ARCHITECTURAL SOCIETIES.

Bradford Society of Architects and Surveyors. The awards in the annual competition by pupils have been made as under:—Architectural subjects: First prize, Mr. Charles E. Hope; second, Mr. F. M. Rattenburg; third, Mr. Sam Rawson. Surveying subjects: First prize, Mr. Fred. Wm. Milnes; second, Mr. E. B. Barlow; third, Mr. Ernest Longsden. The drawings and other papers submitted in competition are to be on view to the public in the reading-room of the Church Institute for a few days. After the distribution of prizes, Mr. T. Healy gave a short address on "The Picturesque in Architecture," showing that although good Gothic work was not necessarily picturesque, good Classic work often was; citing as examples some of the quadrangles of the Oxford Colleges, and some of the Renaissance buildings in Oxford lately designed by Mr. T. G. Jackson. Mr. Charles Gott, C.E., afterwards explained some of the difficulties which he had had to overcome in connexion with the Sheffield sewage scheme, and described the system of precipitation tanks which are in use in Bradford and Sheffield.

Edinburgh Architectural Association.—The usual fortnightly meeting of this Association was held in the Professional Hall, 20, George-street, on the 2nd inst. The President, Mr. Hippolyte J. Blanc, occupied the chair. After the preliminary business, a paper was read by Mr. J. W. Small, F.S.A. Scot., on "Old Scottish Woodwork."

ST. BARTHOLOMEW'S.

SIR,—I quite endorse your remark, at p. 798, on the almost suicidal arrangement of the choir-stalls, the choristers' seats, and the organ,—mainly, because I fear the nave, as now restored, may prove too large for the permanent congregation; but also because of the great inlet of chilly air from unoccupied and damp stony passages. Accepting the conditions of site as now standing, I further remark, (1) the organ might have been built into the recess of the north transept, under the archway at the crossing; (2) it would be desirable to shut off the remaining west end by a glass screen, with folding doors, enclosing within its shelter the font, at the west angle of the south transept wall. But, better still, the retention of the organ, under any conditions, at the west end, is now an archaism, for all prefer to place it as near the altar as practicable; for this purpose,—and here I tread upon dangerous ground,—I would have opened the large pew-window which is built out on the face of the north wall, and constructed an organ over the vaulting of the north aisle: the carved organ-gallery might then face the opening, and be stained to harmonise with the ancient walling; at present, it is too bright.

Accommodated thus, the entire west end might be screened off. It would leave a cosy church, and the vacant transept space could be enclosed for vestry and robing-room. I do not know what accommodation they have at present.

A MERE AMATEUR.

CORSEHILL STONE.

SIR,—Referring to Messrs. W. G. Wyatt & Co.'s letter in yours of the 4th inst. (p. 825), these gentlemen are in error in the denial they made.

It came to our knowledge during the construction of the Dispensary at Battersea that Corsehill stone was not being used.

We wrote to Mr. Thomas Lye, of High-street, Sutton, who was providing the stone and carrying out the masonry work for the said Dispensary, calling his attention to the fact. He called upon us and stated that he had used other stone in error, but that it had been supplied to him by a dealer, who had invoiced it to him as "Corsehill."

Unfortunately we could not sue this person for damages, as we are informed he has left the country.

Messrs. Wyatt say that *some* of the stone has been supplied indirectly by us. This may be so for a small portion, but the bulk is not Corsehill.

Will you permit us, through your columns, to state that we are the sole representatives of Corsehill stone for the South of England, and the only parties licensed to use the trade mark "Corsehill."

No Corsehill stone can be supplied to London and neighbourhood except through us.

Millwall. JAMES TRICKETT & SONS.

The Student's Column.

STONE QUARRIES.—XXIV.

SANDSTONES (*continued*).

FISHPONDS QUARRIES.—These workings are near Bristol, and the stone obtained is known as "Blue Pennant." As this name indicates, the prevailing colour of the stone is blue, but occasionally it approaches a grey, according to position in the quarries. It is very compact, absorbing but little water, and is no doubt a durable material. It is largely used in the West of England, and examples may be seen at, amongst other places in Bristol, the Philosophical Institute.

Forest of Dean Quarries.—The stone coming from these quarries must be looked at from a general point of view, rather than from a specific one, because it is not of uniform texture, and as it comes from quarries some distance from each other, all being situate, however, in the neighbourhood of Coleford and Lydney, in Gloucestershire, in strata of Carboniferous age. The stone is in good repute in the West of England, and the demand has caused many people to start quarrying, mostly on a small scale, but whose operations form an important industry in the aggregate. It will be needless for us to mention these quarries in detail. The largest, show that there are at least three good beds of workable stone, and it would seem that the softer and coarser varieties are found towards the top of the workings, the finer kinds forming the lowest beds. We may also observe that the degree of hardness,—as shown by facility of working,—likewise increases, within certain limits, as the lower beds are reached, so that the top stone is more easily worked than the bottom. Both the middle and lower strata produce fairly good building material, and the blocks are remarkably large. The stone varies in colour from grey to blue, but the presence of iron causes it occasionally to assume a brownish tint. The blue rock is generally found at the base of the quarries. Forest of Dean stone exhibits the lines of stratification tolerably well, and should always be built up with those lines in a horizontal position. This is the principal matter to be attended to in using the stone; the lines in the more compact kinds can only be distinguished by masons in working, as they are sometimes otherwise rather difficult to detect. When it has been carefully selected, it is very durable, as is evident from that used in the churches at Staunton, Newland, and Mitcheldean, which has been exposed 400 years to the rather moist atmosphere of the district. These buildings are decidedly creditable to those who erected them, as far as their preservation is concerned. The stone must have been obtained from the better quarries, as the marks of the masons' chisels are even to-day very clearly seen on them. It has also been used for engineering purposes in the Cardiff, Newport, and Swansea docks; and for building Cardiff Castle and Barracks; the National Provincial Bank, Marlborough; several public edifices in Oxford; Eastern Castle, Witley-court, Doncaster, &c.

Other quarries in the carboniferous rocks are *Abercarne* and *Newbridge*, near Newport (Mon.), where the stone is of a dark bluish grey colour, and, besides being used locally, has been supplied for Newport and Cardiff docks; *Darley Dale* or *Stancliffe*, near Bakewell, in Derbyshire, the colour being a light ferruginous brown, largely used in the Midland counties, at Birmingham and Nottingham; *Heddon*, near Newcastle-on-Tyne, light brown stone, spotted with iron, occasionally with thin laminæ of carbonaceous matter, much used in Newcastle; *Kenton*, also near Newcastle, the stone being raised in large blocks; and *Stenton*, near Durham, rather coarse rock, yielding large blocks, used in and around Barnard Castle. We cannot pass by the quarries,—six in number,—at *Longridge Fell*, Lancashire. The stone obtained from them is a medium-grained sandstone, of various tints of yellow and grey. Some of the workings are more than 100 ft. in depth.* The stone is said to weather well, and has been largely employed in the churches and public buildings in North Lancashire, amongst which Preston Town Hall may be mentioned. It has also been used at the Royal Bank, &c., in Liverpool.

The Permian formation, which overlies the Carboniferous, although largely made of sandstones, supplies, with a few exceptions, material for local buildings only. The principal reason why they are not more extensively raised is that, generally speaking, the stone is not pleasing to the eye, being dirty red or purple, much speckled. The spotted appearance at once shows that the stone is not very durable,—a fact borne out by its open and soft texture. Even where it is of little better quality than usual, the competition of the Carboniferous and Triassic sandstones keeps it, comparatively speaking, out of the market.

There are, however, a few notable exceptions to the above rules. For instance, along the valley of the Eden, near Carlisle, at Penrith, St. Bees, and Corby, the prevailing colour of the stone is red, and of good quality; whilst at Furness, North Lancashire, it also holds its own ground.

Next to Carboniferous sandstones, in point of importance, are those found in the Trias, or New Red Sandstone. As far as England is concerned, they are principally quarried in Cheshire, Shropshire, Staffordshire, Cumberland, and Lancashire. The Triassic formation is divided into two parts (in spite of its name), viz., the Bunter and the Keuper beds. Of these, the lower part of the Keuper is the more productive of good building materials, being remarkable in having rocks of fine grain, closeness, and uniformity of texture. We speak of them as being good in a comparative sense only; for, taken as a whole, they are not quite so durable and serviceable as the sandstones of Carboniferous age, whilst they are immeasurably superior in those respects to the ordinary Permian sandstones. The colour of Triassic stones varies from grey, yellow, and brown, to light and dark red. The following are a few of the more important quarries:—

Grinshill Quarries.—These are near Shrewsbury and comprise at least three large workings known respectively as the "Bridge," "Cureton's," and "Red" Quarries.

The top rock being flaggy, is manufactured into steps, setts, and kerbs. The white, perhaps, is the best kind of stone the quarries produce, being fine-grained. After it has been exposed to the weather for some time, it turns into a very light yellow tint, in addition to becoming harder,—a remark applying equally to all such freestones. It is easily worked, and from the character of its texture is largely used for ashlar and ornamental purposes. That known as the yellow stone is not unlike the white, except in colour, and is used for general work. The sandstone from the red quarry is stated to be even in texture and easily wrought.

The chemical analysis is about the same as most stones of this class, viz., 95·46 silica, 1·17 alumina, ·61 carbonate of lime, &c. The stone appears to have been derived from a granitic area, and the alumina and part of the silica exist in the shape of felspar. Supposing it were otherwise, and the alumina existed with silica in its commonest form,—clay,—the material would be an argillaceous sandstone, and weather indifferently. As it is, Grinshill freestone is in good repute amongst London architects, and we think deservedly so, but the published chemical analysis does not show this. The microscope, however, does, as usual.

The results of Mr. David Kirkaldy's experiments as to resistance to thrusting stress of three 6 in. cubes of stone from the Bridge Quarry

* See Mr. De Rance, in Hull's "Building and Ornamental Stones," p. 249.

show as follows, the figures indicating the stress per square foot in tons, at the time the stones were crushed and the steelyard dropped:—

378·4 350·4 276·6

They appear to have crushed very suddenly. We prefer to take the lowest result as the actual outcome of the experiments, for reasons previously explained.*

Grinshill stone has been extensively used in public buildings, both ancient and modern, in Shrewsbury and the district, including Battle Church on Shrewsbury Battlefield. It has also been used in Manchester, Liverpool, Birmingham, Crewe, Wolverhampton, and London.

Hollington Quarries. — These are near Uttoxeter, in Staffordshire, and the stone is of a greyish-brown colour, though occasionally white. It is fine-grained, yielding blocks 30 ft. to 40 ft. square and 8 ft. thick.† Examples of the material, built up, may be seen in the Town Hall, Derby; Meer Hall, Cheshire; Trentham Hall, &c.

Manley Quarries, near Dunham, in Cheshire, supply two kinds of stone, one of a light red tint, and the other white. Large blocks are obtained. It is strong grained, and said to be suitable for columns. Chester Cathedral is restored with it, whilst it has also been used at the Town-hall, Market-hall, and Castle in that city.

Other Triassic sandstone quarries are at *Colwick* and *Colton Hill*, near Rugeley, Staffordshire, where the stone, being soft, is suitable for fine work. It has been used in buildings and churches in the vicinity. *Ombersley* and *Hadley*, near Worcester, the stone being white, light brown, and reddish, and of good quality. The largest blocks are obtained from the lowest part of the workings. It has been used, amongst other places, in Worcester Cathedral. *Park Quarry*, Tixall, yields a light brown or greyish sandstone, micaceous in parts, and used in St. George's Church, Birmingham, &c.

Some of the better lower Triassic beds are quarried near Liverpool, and used in that city. This part of the series, however, is to a large extent unfit for building purposes, being in greater demand for mouldings and for ironworks and foundries.

The Jurassic beds produce but very little sandstone. The best-known quarries in the formation are at *Park Spring*, near Farnley, Leeds which (it appears) are nearly worked out; and *Aislaby*, near Whitby, Yorkshire. In both cases, they have supplied the locality with building material, whilst the stone known in the market as "Park Spring" usually comes from other quarries.

Wealden sandstone is worked in the neighbourhood of Tunbridge Wells. The stone, which contains much carbonate of lime, is fine-grained, and of a speckled brown appearance. It has been used in the Roman Catholic chapel and other buildings in Tunbridge Wells.

Cretaceous sandstones are few in number, the principal being at Godstone, Godalming, and Colley, in Surrey; and at Beer, near Axminster, in Devonshire.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

NOVEMBER 29.

By Masterman, Evans, & Co.

Rotherhithe—The moiety of a ground-rent of 39*l.* 1s. 6d., term 67 years, with reversion for three years to rack rents £2,175
Wanstead, Essex—The Cottage and stabling, freehold 1,210

By Weatherall & Green.

Strand—One-third share of 12, Houghton-street, freehold 210
One-third share of 9, New Inn-passage, freehold 100
Half-share of 15, Houghton-street, freehold..... 420
Keston, Kent—4, Leonard-place, 50 years, ground-rent 1*l.* 15s. 290
Merton—Freehold rental of 42*l.* 10s., reversion in 91 years 600
Ground-rents of 7*l.* 10s., reversion in 91 years..... 150
Five peppercorn rentals, reversion in 91 years ... 13

By W. Hall.

Paddington—42, Burlington-road, 73 years, ground-rent 12*l.* 700

By Graves & Son.

Brixton—42 to 56 and 68 to 76 even, Saxtley-street, 91 years, ground-rent 78*l.* 4,800

By J. Baker & Son.

Greenhill, Havelock-place—Two freehold cottages 365

NOVEMBER 30.

By T. Turner.

Haverstock Hill—93, Prince of Wales-road, and improved ground-rent of 3*l.*, term 54 years 760

By E. & H. Lumley.

Bucks—The Lillington Dayrell Estate, of 471a. 2r. 18p., freehold 30,100

By W. Knight.

Hyde Park—16, Wilton-crescent, term 11 years..... £300

By Harris & Jenkinson.

South Lambeth—2 and 3, Wyvill-street, 53 years, ground-rent 10*l.* 510
Wandsworth-road—1, Bradley-street, 51 years, ground-rent 4*l.* 200
Erith—The Britannia beer-house, and plot of land, 63 years, ground rent 20*l.* 265

By Robbin & Perrin.

Stroud Green—127, Stroud Green-road, 77 years, ground-rent 8*l.* 7s. 6d..... 575
55, Florence-road, 92 years, ground-rent 7*l.* 10s.... 410
Finsbury Park—6, Cornwall-road, 90 years, ground-rent 7*l.* 10s. 400

By Broad, Pritchard, & Wiltshire.

Regent's Park—52, Gloucester-crescent, 76 years, ground-rent 7*l.* 520
Fulham—31, Fulham Park-gardens, 91 years, ground-rent 9*l.* 395

DECEMBER 1.

By Messrs. Cronin.

Camberwell—21 and 23, De Crespigny Park, 70 years, ground-rent 16*l.* 1,020
2 and 3, Claude-villas, 60 years, ground-rent 2*l.* 7s. 1,240
48, Coldharbour-lane, 28 years, ground-rent 8*l.* ... 350
Pimlico—40 and 42, Moreton-street, 40 years, ground-rent 16*l.* 1,040
Chelsea—Ground-rent of 36*l.*, term 16 years..... 220
Ground-rent of 10*l.* 10s., term 16 years..... 100

By Charles & Tubbs.

King's-cross—11, Euston-road, 20 years, ground-rent 13*l.* 13s. 965
Holloway—18 to 28 even, Hertslet-road, freehold... 2,490

By S. Walker & Runtz.

Wandsworth—13, Park-road, freehold 780
9 and 11, Park-road, freehold 1,565
26 and 28, High-street, freehold 1,720
Blackfriars—14, Nelson-square, freehold 925

By C. B. Musgrave.

Lewisham—6 to 9, Springfield-avenue, 95 years, ground-rent 48*l.* 1,470
5, Gresham-villas, 95 years, ground-rent 5*l.*..... 195

DECEMBER 2.

By G. Pearce & Sons.

Leyton, Oliver-road—Rushton House, and three plots of land, freehold..... 850
Hoxton—7 to 10, Underwood-street, 13 years, ground-rent 12*l.* 510

By H. Fielding.

Chelsea—100, Walton-street, 54 years, ground-rent, 7*l.* 705

By M. Miles.

Lower Norwood, Norwood-road—Fern Lodge, freehold 1,160
New-cross—Improved ground-rents of 32*l.* per annum, term 48 years..... 470
17, 19, and 21, Amersham-road, 46 years, ground-rent 10*l.* 7s. 6d..... 415
Pimlico, Warwick-mews—A two-stall stable, 43 years, ground-rent 12*l.* 140

By Newbon & Harding.

King's-cross—6, Derby-street, freehold..... 855
6, Liverpool-street, freehold..... 855
Holloway—3, Cardwell-terrace, 90 years, ground-rent 9*l.* 9s. 705
Canonbury—51, Grosvenor-road, 63 years, ground-rent, 8*l.* 8s..... 625
Islington—36, Dean-street, 41 years, ground-rent 5*l.* 290
Stoke Newington—9, Millard-road, 88 years, ground-rent 5*l.* 10s. 260
Islington—187 and 188, Upper-street, copyhold..... 2,600

DECEMBER 3.

By Baker & Son.

Kingsland—107 and 109, Downham-road, 32 years, ground-rent 1*l.* 760
Islington—9a, Gordon-street, 39 years, ground-rent 6*l.* 155
Clerkenwell—6, St. John's-lane, freehold..... 840
Kensington—A profit rental of 51*l.* per annum, term 35 years 720
Essex, Takeley—The residence called The Limes, freehold 580
Enclosure of land, containing 6a. 3r. 38p. freehold 250
Finsbury Park—7, Alexandra-road, 87 years, ground-rent 12*l.* 12s. 350
Upper Tooting, Wandle-road—Two freehold residences 675
Berks, West Challow—The White Horse Manure Works, 1,000 years 260
West Hanney—Three freehold houses 165

* See the *Builder*, vol. l. pp. 560, 561.
† See Hull's "Building and Ornamental Stones," p. 256.

MEETINGS.

MONDAY, DECEMBER 13.

Society of Arts (Cantor Lectures).—Mr. Lewis F. Day on "The Principles and Practice of Ornamental Design," III. 8 p.m.

Liverpool Architectural Society.—Mr. J. M. Hay on "The Liverpool Cathedral.—What! Something more about it?" 7 p.m.

TUESDAY, DECEMBER 14.

Institution of Civil Engineers.—Discussion on Dr. John Hopkinson's paper on "The Electric Lighthouses of Macquarie and of Tino." 8 p.m.

Birmingham Architectural Association.—Mr. A. Reading on "Venetian Architecture." 7·30 p.m.

Manchester Architectural Association.—Discussion on the Proposed Charter of the R.I.B.A. 7·30 p.m.

WEDNESDAY, DECEMBER 15.

Society of Engineers.—Annual Dinner. 6 p.m.

Civil and Mechanical Engineers' Society.—Mr. M. A. Pollard-Urquhart on "Copper Production in the South of Spain." 7 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting. 8·30 p.m.

Society of Arts.—Discussion on Dr. C. Meymett Tidy's paper on "Sewage Disposal." 8 p.m.

Royal Meteorological Society.—Five papers will be read. 7 p.m.

Liverpool Architectural Society.—Associated *soirée* at St. George's Hall. 8 p.m.

York Architectural Association.—Mr. A. Pollard on "Architectural Federation." 7·45 p.m.

THURSDAY, DECEMBER 16.

St. Paul's Ecclesiological Society.—Mr. Somers Clarke, F.S.A., will read a paper entitled "A Rambling Discourse on Churches, &c." 7·30 p.m.

Bradford Historical and Antiquarian Society.—Mr. Wm. Cudworth on "Old Bradford Lawyers." 7·30 p.m.

Edinburgh Architectural Association.—Mr. W. T. Allrieve on "An Architectural Student's Impression of Vienna and Berlin."

FRIDAY, DECEMBER 17.

Architectural Association.—Mr. H. Longden on "Decorative Metal Work." 7·30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. C. E. Davenport on "Water-supply in Rural Districts." 7·30 p.m.

Edinburgh Architectural Association.—Annual dinner. 6·30 p.m.

Miscellanea.

Archæology at Athens. — The Athens correspondent of the *Standard* telegraphs that the Minister of Public Instruction has granted permission to Mr. Penrose, Director of the English School of Archæology, to continue the excavations in the neighbourhood of the Great Temple of Jupiter Olympus at Athens.

Architectural Education in America.—The *Sanitary News* (Chicago) says that there are forty-eight students in the architectural department of Columbia University. Of this number fifteen are freshmen, thirteen are sophmores, ten are juniors, and six seniors. There are four post-graduate students.

The Leaseholders' Fund Corporation (Limited) is the title of a new company now in course of formation for the purpose of securing to owners of leasehold property, and others, the return of principal at the expiration of a fixed period, in the manner explained in the advertisement which appears in another column.

Machinery at the Smithfield Club Show.—There was a good representative collection of steam engines and other machinery at Islington this week, the exhibitors including Messrs. Barrows & Stewart, Clayton & Shuttleworth, Davey Paxman & Co., W. Eddington, Eddington & Steevenson, E. S. Hindley, Isler & Co., F. W. Reynolds & Co., E. R. & F. Turner, and other well-known firms. Ensilage appliances were well illustrated, and, with the specimens of English-grown tobacco shown at some of the always attractive seed stalls, came in for a large share of attention by the visitors.

Grindstones of Glass.—The German Plate Glass Company, of Freden, in Saxony, has just manufactured grind-stones of glass. A circular disc, 8 to 9 cm. in diameter, is furrowed on one side by means of diamonds, and then the grooves are cut with specially-made chisels. In order to make the stones as thick as necessary, cement is added to the upper surface. Several considerable orders have already been received for these new kinds of grind-stones, and the makers maintain that they will last twice as long as those now in use of granite, &c.

Liverpool Engineering Society. — The usual fortnightly meeting of this society was held at the Royal Institution, Colquitt-street, Liverpool, on Wednesday, December 1st. The retiring president, Mr. Coard S. Pain, Assoc. Inst. C.E., delivered an address on the "Depression of Trade as affecting Engineering." After speaking of the difficulty in arriving at any satisfactory reason for the universal depression experienced, he proceeded to compare the present condition of the iron trade and that under which future trade would have to be secured. Statistics culled from the evidence given before the Royal Commission on Depression in Trade were quoted, showing the estimated consumption of iron per head of the world's population as well as the consumption by individual nations. The next table showed the various uses to which the iron raised in the world was applied, as far as could be ascertained, from which it appears that about one-fourth of the whole quantity raised is rolled into iron rails: hence the selection of the iron trade as that by which the position of engineering may be gauged. The prospects of this country as regards the future supply of railway plant, ships, &c., were then considered, followed by an inquiry into the cost of production. The interesting questions of natural resources, wages, royalties, railway rates, and food in the different countries were entered into, from which it was argued that, on the whole, Great Britain was not unfavourably situated for competing in the world's markets.

Society of Engineers.—At a meeting of the Society of Engineers, held on Monday evening, December 6th, at the Westminster Town Hall, Mr. Perry F. Nursey, President, in the chair, a paper was read on "River Pollution caused by Sewage Disposal," by Mr. G. B. Jerram. The author premised that it was well known that the Act for prevention of pollution of rivers and streams was ineffectual, and hoped that in the ensuing session, either by the extension of Local Government in counties or otherwise, greater powers may be obtained to restore the purity of the rivers, &c. The chief pollution arose, no doubt, from the influx into the rivers and streams of the so-called purified sewage from the many sewage disposal works, especially where chemical treatment is used. Owing to the daily varying quantity and quality of the sewage, it was not possible so exactly to proportion the supply of the deodorising agents as to ensure an evenly pure effluent passing into the streams. The fact that the effluent was at times charged with too much chemicals was in itself a presumed means of pollution of the rivers, as, owing to the presence of this excess of the precipitating agent, not only was the organic matter, which is present in all streams and rivers, precipitated, but also the excess of sewage that may have been present in the effluent that had been passed into the river some short time previously. To minimise this effect it was necessary to employ automatic machinery, whereby the variable flow of the sewage may itself regulate the quantity of chemicals to be used. A description was then given of the new Sewage Disposal Works at Walthamstow, where the principles held by the author had been put into practice.

British Archæological Association.—At the meeting of this Association on Wednesday, December 1st, the Rev. Dr. Sparrow Simpson, in the chair, the completion of the reparation of the old Tolhouse of Great Yarmouth was announced, the buildings being now used as a public library. The safety of a Roman Circular Tomb at High Rochester (Bremenium) was reported, but some others, square in form, have been demolished to obtain stone for agricultural purposes. They stood along the course of Watling-street. The formation of a Committee for the preservation of Old Croydon Palace was announced, and also the gratifying intelligence that funds have been subscribed sufficient to enable a lease to be taken for a short period. The demolition of the building for a time is thus averted, and it is hoped that some useful purpose may be found to ensure their permanent preservation. Dr. Alf. C. Fryer described the discovery of a vessel about 80 ft. in length, deeply embedded in mud, at the Cattwaters, Plymouth. The craft is clinker built, of unknown age, having a quantity of flints in her hold. There do not appear to have been any masts. The chairman exhibited some portions of a Roman pavement recently found beneath the site of his former church, St. Matthew's, Friday-street, removed a few years since. The first paper was read by the chairman, and was entitled, "St. Vedast." Foster-lane was mentioned, and the change of the name of the lane from that of the saint was traced through various gradations. There is no reason for the latter part of the name, St. Vedast, *alias* Foster, by which the church is now known. The second paper was on the "Traders' Signs of Old London Bridge," by Mr. H. Syer Cuming, F.S.A. (Scot.).

Discovery of Church Remains in Norway.—We referred recently to the discovery at Throndhjem, in Norway, of some interesting remains of the old church of St. Olave, dating from the first part of the eleventh century, and which was burned down in 1531. Since then several other remains have come to light in and around the same locality. Thus, it has been found that the present town-hall is built directly on some of the walls of the former church. The foundations of several of the towers have also been found, and the bases of several pillars, all of which are clearly cut.

PRICES CURRENT OF MATERIALS.

TIMBER.	£. s. d.	£. s. d.
Greenheart, B.G. ....ton	6 10 0	7 0 0
Teak, E.I. ....load	9 0 0	14 0 0
Sequoia, U.S. ....foot cube	0 2 4	0 2 7
Ash, Canada ....load	3 0 0	4 10 0
Birch ,, ...	2 5 0	3 10 0
Elm ,, ...	3 10 0	4 10 0
Fir, Dantsic, &c.	1 10 0	4 0 0
Oak ,, ...	2 10 0	4 10 0
Canada	3 0 0	6 0 0

TIMBER (*continued*).	£. s. d.	£. s. d.
Pine, Canada red	2 0 0	3 10 0
,, yellow	2 5 0	4 0 0
Lath, Dantsic ....fathom	3 0 0	5 0 0
St. Petersburg	4 0 0	5 10 0
Wainscot, Riga ....log	2 15 0	4 0 0
,, Odessa, crown....	3 5 0	3 7 6
Deals, Finland, 2nd and 1st...std.100	7 0 0	8 0 0
,, 4th and 3rd	6 0 0	6 10 0
Riga	5 10 0	7 0 0
St. Petersburg, 1st yellow	8 10 0	14 0 0
,, 2nd ,, ...	7 0 0	8 0 0
,, white	7 0 0	10 0 0
Swedish	6 0 0	15 0 0
White Sea	7 0 0	17 10 0
Canada, Pine, 1st	17 0 0	29 0 0
,, ,, 2nd	11 0 0	17 0 0
,, ,, 3rd, &c.	6 0 0	8 0 0
,, Spruce, 1st	8 0 0	11 0 0
,, ,, 3rd and 2nd	5 0 0	7 10 0
New Brunswick, &c.	5 0 0	7 0 0
Battens, all kinds	4 0 0	12 0 0
Flooring Boards, sq. 1 in., Prepared, first	0 9 0	0 13 0
Second	0 7 6	0 8 6
Other qualities	0 5 0	0 7 0
Cedar, Cuba ....foot	0 0 3	0 0 3½
Honduras, &c.	0 0 2½	0 0 3½
Australian	0 0 2	0 0 3
Mahogany, Cuba	0 0 4	0 0 7
St. Domingo, cargo average	0 0 4	0 0 7
Mexican ,, ...	0 0 3½	0 0 4½
Tobasco ,, ...	0 0 4	0 0 6½
Honduras ,, ...	0 0 4	0 0 6½
Maple, Bird's-eye	0 0 6	0 0 8
Rose, Rio ....ton	7 0 0	10 0 0
Bahia....	6 0 0	10 0 0
Box, Turkey	5 0 0	17 0 0
Satin, St. Domingo ....foot	0 0 6	0 0 10
Porto Rico	0 0 7	0 1 0
Walnut, Italian	0 0 4	0 0 5

METALS.	£. s. d.	£. s. d.
IRON—Bar, Welsh, in London....ton	4 7 6	4 15 0
,, ,, in Wales	4 2 6	4 7 6
,, Staffordshire, London	5 10 0	6 0 0
Sheets, single, in London	6 15 0	8 10 0
Hoops ,, ...	6 0 0	7 0 0
Nail-rods ,, ...	5 15 0	6 10 0
COPPER—		
British, cake and ingot ....ton	43 10 0	44 0 0
Best selected	44 0 0	45 0 0
Sheets, strong....	51 10 0	52 0 0
Chili, bars	39 7 6	40 0 0
YELLOW METAL ....lb.	0 0 4	0 0 4½
LEAD—		
Pig, Spanish ....ton	13 17 6	0 0 0
English, common brands....	13 2 6	0 0 0
Sheet, English	14 0 0	14 2 6
SPELTER—		
Silesian, special ....ton	14 10 0	14 12 6
Ordinary brands....	14 7 6	14 10 0
TIN—		
Straits....ton	101 10 0	0 0 0
Australian	102 0 0	0 0 0
English ingots	105 0 0	0 0 0
OILS.		
Linseed ....ton	20 2 6	20 7 6
Cocoanut, Cochin	37 10 0	38 0 0
Ceylon	26 10 0	0 0 0
Palm, Lagos	24 0 0	0 0 0
Rapeseed, English pale	22 5 0	0 0 0
,, brown	20 15 0	0 0 0
Cottonseed, refined	18 10 0	19 10 0
Tallow and Oleine	25 0 0	45 0 0
Lubricating, U.S.	6 0 0	10 0 0
,, refined	8 0 0	13 0 0
TURPENTINE—		
American, in casks ....cwt.	1 8 0	0 0 0
TAR—		
Stockholm ....barrel	0 15 0	0 15 6
Archangel	0 10 6	0 11 0

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Designs for Jubilee Medal	Art-Union of London...	50*l.*, 30*l.*, and 20*l.* ...	Feb. 1st	ii.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Sea Wall and Steps, and Cutting Cliff	Dawlish Local Board...	J. S. Delbridge....	Dec. 14th	xviii.
Making-up Roads	Tottenham Local Board	— De Pape	do.	ii.
Works at Infirmary	St. Leonard, Shoreditch	F. J. Smith	Dec. 15th	ii.
Granite Paving, &c.	Wandsworth, &c., Un.	T. W. Aldwinckle	Dec. 16th	ii.
Glazed Stoneware Pipes	Folkestone Corporation	A. W. Conquest	Dec. 18th	ii.
Building Durham College of Science	Newcastle-on-Tyne	R. J. Johnson	do.	xviii.
Brick Sewer, &c.	Paddington Vestry	*Official*....	Dec. 20th	xviii.
Works, Repairs, and Alterations	Great Eastern Ry. Co.	J. Wilson	do.	ii.
Broken Granite and Flints....	Southend Local Board...	F. H. Tulloch	Dec. 21st	xviii.
Pipe-Sewer, &c....	Greenwich Bd. of Wks.	*Official*	Dec. 22nd	xviii.
Stores and Materials....	Nottingham Corporation	A. Brown	Dec. 23rd	ii.
Nine-Floor Granary....	Bristol Corporation....	J. W. Girdlestone	Dec. 28th	ii.
New Municipal Buildings	Sunderland Corporation	Brightwen Binyon	Dec. 29th	xviii.
Outfall Sewerage, &c., Works	Barnet R. S. A....	W. H. Mansbridge	do.	ii.
Enlargement, &c., of Schools	School Bd. for London	*Official*	Not stated...	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Superintending Architect	Met. Board of Works	1,500*l.*	Jan. 12th	xvi.

TENDERS.

CHICHESTER.—For sanitary improvements and works for the disposal of sewage, at the West Sussex, East Hants, and Chichester Infirmary. Mr. Mark H. Judge, architect, Paddington:—

John C. Christie, Aldgate (accepted) ...£715 0 0

CHISWICK.—For the erection of entrance-gates, fitters' shop, &c., at the Chiswick Depôt for the West Metropolitan Tramways Company. Mr. H. I. Newton, architect, Queen Anne's-gate, Westminster:—

Fostin	£420 0 0
Wilkes & Co....	282 0 0
Bryant....	243 0 0
Chafen (accepted)	215 0 0

DOVER.—For decoration of the principal room at Waldershare Park, near Dover, for the Trustees of the late Earl of Guildford. Mr. Robert Raikes, architect. Messrs Karslake & Mortimer, quantity surveyors:—

Crace & Son	£1,332 1 5
Collinson & Lock	1,319 16 0
Simpson & Co.	977 0 0
Gillow & Co.	957 4 2
Cowtan & Sons	951 0 0

EARLEY (Reading).—For the erection of new schools, &c., for the Rev. C. R. Honey. Mr. W. Ravenscroft, architect, Reading. Quantities supplied by Messrs. Cooper & Sons:—

J. H. Margetts	£934 2 6
Higgs & Sons....	925 0 0
S. East	906 0 0
G. Searle....	850 0 0
J. Winter	850 0 0
J. Bottrill	812 12 0
J. C. Cook....	784 0 0
W. H. Simonds*	768 0 0

[All of Reading.]

* Accepted subject to a few modifications.

GREENHAM (Berks).—For alterations and additions to old malt-houses (exclusive of floors), for Mr. William Skinner. Mr. James H. Money, architect, Newbury:—

G. Elms, Stockcross	£390 0 0
S. Elliott, Newbury....	325 0 0
E. James, Newbury (accepted)	313 0 0

HENDON.—For residence, for Dr. Cameron. Mr. Banister Fletcher, architect:—

Blasby & Hodges	£1,700 0 0
H. J. Williams	1,500 0 0
J. P. Donne	1,350 0 0
J. Garrud	1,200 0 0
W. Tout (accepted)....	1,150 0 0

HERNE BAY.—For the erection of four dwelling-houses, at Herne Bay, for Mr. D. C. Chambers. Mr. E. L. Elgar, architect, Ramsgate:—

E. T. C. Adams, Herne Bay	£1,250 0 0
C. Welby, Herne Bay....	998 0 0
J. Newby, Ramsgate	895 0 0
T. Cornelius, Whitstable	856 0 0
T. Elgar, Ramsgate....	800 0 0
Regis & Coppen, Margate	799 10 0
C. Home, Ramsgate	785 0 0
W. W. Martin, Ramsgate....	719 0 0
H. Miller, Ramsgate (accepted)	710 0 0

HORNSEY.—For paving, kerbing, channelling, sewering, metalling, and making up Dickenson's-road, Crouch-hill, for the Hornsey Local Board. Mr. T. De Courcy Meade, engineer and surveyor:—

Jackson & Sons, Finsbury Park	£811 0 0
Aspinall & Sons, Hoxton	785 0 0
Pizzey, Hornsey	784 0 0
Mowlem & Co., Westminster	728 0 0
Nicholls, Wood Green (accepted)	705 0 0

HOXTON.—For underpinning and putting shop-fronts to No. 66, New North-road. Mr. Brett A. Elphicke, architect, Tunbridge Wells:—

E. Trill	£245 0 0

KINGSLAND.—For alterations to No. 1, Kingsland Green, for Mr. W. A. Wigg. Mr. Banister Fletcher, architect :—

	With Zinc Roof.	With Fire-proof Roof.
H. J. Williams	£356 0 0	£369 0 0
Aldridge & Co.	196 0 0	223 0 0
Andrews & Roberts	199 0 0	216 0 0
J. Jarvis & Son	170 0 0	197 0 0
Steele Bros. (accepted)	168 0 0	198 0 0

LONDON.—For the erection of warehouse, &c., Custom House Quay, Lower Thames-street, for Messrs. Cruickshank & Co. Mr. C. A. Richards, architect. Quantities by Mr. A. Howard :—

		Time.
J. Lidstone & Sons, Snow Hill	£2,171 0 0	3 months.
J. Woodward, Wilson-street	2,030 0 0	2½ months.
N. Lidstone, Finsbury Park*	2,035 0 0	2 months.

* Accepted subject to modifications.

LONDON.—For shop-fronts, &c., at Queen-street, E.C. Mr. H. H. Bridgman, architect :—

W. H. Lascelles & Co. (accepted) £827 19 6

LONDON.—For pulling down and rebuilding No. 12, Pancras-lane, E.C. Mr. H. H. Bridgman, architect. Quantities by Mr. F. Thomson :—

C. Weeks	£1,743 0 0
Scrivener & Co.	1,549 0 0
E. Toms	1,517 0 0
Longmire & Burge	1,495 0 0
H. Burman	1,418 0 0
W. Brass	1,412 0 0
North Bros.	1,398 0 0
Colls & Sons	1,395 0 0
Patman & Fotheringhnm	1,363 0 0
J. R. Hunt (too late)	1,329 0 0
Wall & Co.	1,310 0 0
S. R. Lamble	1,293 0 0

LUTON.—For alterations to shop, for Mr. G. Alexander. Mr. A. E. Smith, architect, Luton :—

Parkins	£189 0 0
Mardel	181 10 0
Neville Bros. (accepted)	155 0 0

[All of Luton.]

LUTON.—For erecting house, High Town, Luton, for Mr. Spickett. Mr. A. E. Smith, architect :—

Cox, Bros.	£649 0 0
Parkins	598 0 0
Saunders	557 0 0
Hodge	550 0 0
Long	480 3 6
Sinfield*	438 0 0

[All of Luton.]

* Accepted, with additions, at 451*l.*

LUTON.—For building underground stores, for Mr. S. G. Hobbs. Mr. A. E. Smith, architect :—

Saunders	£275 10 0
Pryor	269 0 0
Neville (accepted)	190 0 0

LUTON.—For alterations and additions to the offices of the *Luton Reporter*. Mr. A. E. Smith, architect :—

	Without Stone Bay.	With Bay.
Rance Bros.	£515 0 0	£625 0 0
Neville Bros.	512 0 0	593 0 0
Parkins	485 0 0	568 0 0
W. Dunham & Son	480 0 0	550 0 0
G. Smart	477 0 0	563 0 0
J. Sinfield	450 0 0	519 10 0
G. W. Pryer	449 0 0	499 0 0
R. Ford*	402 0 0	465 0 0

[All of Luton.]

* Accepted, with additions, at 549*l.*

SIDCUP.—For re-making and re-metalling roads and footpaths, and other works, on the Longlands Park Estate, Sidcup, for Mr. G. P. King. Mr. R. Tomlinson, surveyor, Gunnersbury :—

	Road.	Lake.	Fencing.	Total.
J. Pizzey, Hornsey	£568	£125	—	£693 0 0
H. Owen, Sevenoaks	385	250	£75 0 0	635 0 0
Cook & Son	320	—	—	320 0 0
Rowland Bros. Fenny Stratford	299	130	26 19 0	455 19 0

THATCHAM (Berks).—For proposed cemetery chapel, for the Thatcham Burial Board. Mr. James H. Money, architect, Newbury :—

	Omit vestry and shorten chapel.
W. H. Simonds, Reading	£605 0 0 £557 0 0
E. James, Newbury	411 0 0 344 0 0
G. Elms, Stockcross	383 15 0 341 0 0
H. Botsford, Newbury	349 0 0 321 0 0

TOTTENHAM.—For the construction of engine-house, engine foundations, boiler-house, chimney-shaft, flues, setting boilers, water-tower, and works in connexion with the waterworks extensions, Longwater, for the Tottenham Local Board of Health. Mr. A. H. de Pape, engineer :—

Cave & Son, New Barnet	£5,666 0 0
W. Downs, Walworth	4,563 0 0
P. Hart, Tottenham	4,428 0 0
Cook & Co., Battersea	4,322 13 1
G. Bell, Tottenham	4,273 19 1
Howell & Son, Lambeth	4,170 0 0
W. Bell, Saffron Walden	4,071 7 4
Wall, Chelsea	3,970 0 0
Boyd, McKinally, Walbrook	3,895 3 10
Wilkinson Bros., Finsbury Park*	3,648 0 0
For Engines, Boilers, Pumps, &c.	
Warner & Son, Cripplegate	£8,473 5 0
Duncan Stewart & Co., Glasgow	6,840 0 0
Easton & Anderson, Whitehall-place	6,800 0 0
T. Watson, Burton	5,900 0 0
Renshaw, King, & Co., Stoke-on-Trent	5,799 0 0
Coalbrookdale Iron Company, Coalbrookdale	5,367 0 0
Goddard & Massey, Nottingham	5,159 10 0
Gimson & Co., Leicester	5,127 0 0
Glenfield Iron Company, Kilmarnock	4,807 0 0
Lilleshall Iron Company, Thefnall	4,794 0 0
G. Waller & Co., Southwark	4,515 0 0
Wood Bros., Sowerby Bridge	3,900 0 0
H. Ainsworth, Dewsbury	3,540 0 0
Thanet, Walker, & Co., Leeds (informal)	—

* Accepted.

Schools, Eastbourne.—We are asked to mention that the tenders for this work were not submitted by firms "All of Eastbourne," one of the competitors being Mr. James Longley, *not* Langley, of Crawley. The amount of Mr. Backhurst's tender was not 4,140*l.*, but 4,014*l.* Messrs. "Dow & Son" should be "Dore & Sons" (accepted).

SPECIAL NOTICE.—Lists of Tenders frequently reach us too late for insertion. They should be delivered at our office, 46, Catherine-street, W.C., *not later than Four p.m.* on THURSDAYS.

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"THE BUILDER" is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 12s. per annum PREPAID. To all parts of Europe, America, Australia, and New Zealand, 26s. per annum. To India, China, Ceylon, &c. 30s. per annum. Remittances payable to DOUGLAS FOURDRINIER, Publisher, No. 46, Catherine-street, W.C.

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W. D. & S. (list was printed substantially as received).—R. & Co. (amounts should be sent).—W. P. (already received).—W. S. (deferred).—S. L. (next week).—E. G. (next week).—R. H. D. (next week).—F. T. W. G. (next week).

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

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Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

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Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds, and milk-rooms, granaries, tun-rooms, and terraces. [ADVT.

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Seyssel, Patent Metallic Lava, and White Asphaltes.
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